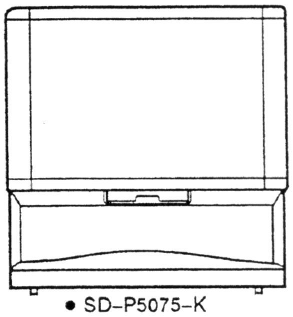
Service Manual

PIONEER
The Art of Entertainment



• SD-P5075-K

ORDER NO.
ARP2808

PROJECTION MONITOR RECEIVER

SD-P5075-K

SD-P5073-K

SD-P4575-K

SD-P4573-K

SD-P5575-K

PRO-97

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model						Power Requirement	Remarks
	SD-P5075-K	SD-P5073-K	SD-P4575-K	SD-P4573-K	SD-P5575-K	PRO-97		
KUXIC	○	○	○	○	○	○	AC120V	

CONTENTS

1. SAFETY PRECAUTIONS ······ 2
2. PRODUCT SAFETY NOTICE ······ 3
3. CHARGED SECTION, HIGH VOLTAGE GENERATING POINT AND X-RAY PROTECTION ······ 4
4. EXPLODED VIEWS, PACKING AND PARTS LIST ······ 6
5. SCHEMATIC AND PCB CONNECTION DIAGRAMS ······ 22
6. PCB PARTS LIST ······ 119
7. ADJUSTMENTS ······ 130
8. REPLACING THE CRT ASSEMBLY ······ 165
9. HOW TO CLEAN ······ 169
10. HOW TO CHECK POWER DOWN ······ 170
11. IC INFORMATION ······ 171
12. BLOCK DIAGRAM ······ 174
13. REMOTE CONTROL UNIT ······ 175
14. WIRING DIAGRAM ······ 180
15. PANEL FACILITIES ······ 181
16. SPECIFICATIONS ······ 193

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

© PIONEER ELECTRONIC CORPORATION 1993

IFI AUG. 1993 Printed in Japan

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols -▮▭- (fast operating fuse) and/or -▮▭⧖- (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible -▮▭- (fusible de type rapide) et/ou -▮▭⧖- (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

1. SAFETY PRECAUTIONS

NOTICE:Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.
The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled.
   Keep picture tube away from the body while handling.
2. When service is required, even though the PROJECTION MONITOR RECEIVER an isolation transformer should be inserted between power line and the set in safety before any service is performed.
3. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
4. When service is required, observe the original lead dress.
   Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
5. Always use the manufacturer's replacement components.
   Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's.
   Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

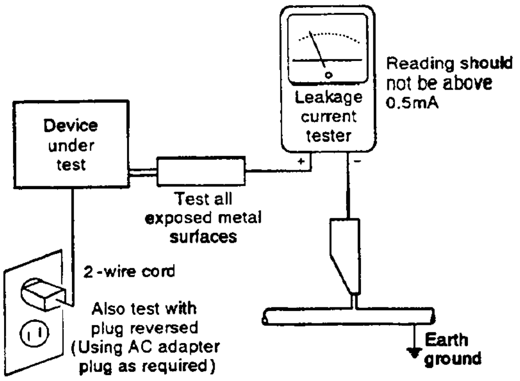
Leakage Current Cold Check

With the AC plug removed from the 120V AC 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester(DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part(input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MΩ and a maximum resistor reading of 5MΩ . Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 120V AC 60Hz outlet (do not use an isolation transformer for this check). Turn the AC power switch on.

Using a "Leakage Current Tester(Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet(input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground(water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.


Device under test
Leakage current tester
Reading should not be above 0.5mA
+
-
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

High Voltage

This set is provided with a X-ray protection for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this X-ray protection may correctly be operated.

Serviceman Warning

In the status of the black picture(video muting is being applied)when no signal is input, high voltage of this set during operation is less than 30.9kV. In case any component having some relation to the high voltage is replaced, confirm that the high voltage is lower than 30.9kV in the status of the black picture when no signal is input.

To measure H.V. use a high impedance H.V. meter.

Connect (-) to earth and (+) to the FBT anode cable connector.

(Refer to page 138.)

X-radiation

TUBE:The primary source of X-radiation in this set is the picture tube.

For continued X-radiation protection, the replacement tube must be the same type as the original, PIONEER approved type.

The picture tube(CRT assembly R, G, B)used in this set holds complete guarantee against X-ray radiation when the X-ray is sealed (See page 5). Accordingly, when the current in flowing to the picture tube(CRT assembly R, G, B), be sure to perform it by putting the tube into X-ray sealed applied state. Avoid absolutely to flow the current to the picture tube(CRT assembly R, G, B)itself. Moreover, when the voltage of the high voltage circuit becomes abnormally a little higher, the picture tube radiates X-rays. Accordingly, when servicing the high voltage circuit be sure to replace as an assembly with the POWER SUPPLY assembly in the manner in which has been adjusted to perform normal operation.

2.PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

3. CHARGED SECTION, HIGH VOLTAGE GENERATING POINT AND X-RAY PROTECTION

■ Charged section

The circuit in which the commercial AC power is used as it is without passing through the power supply transformer. If the charged section is touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. In this case, be sure to connect the set via an insulated transformer and supply the current.

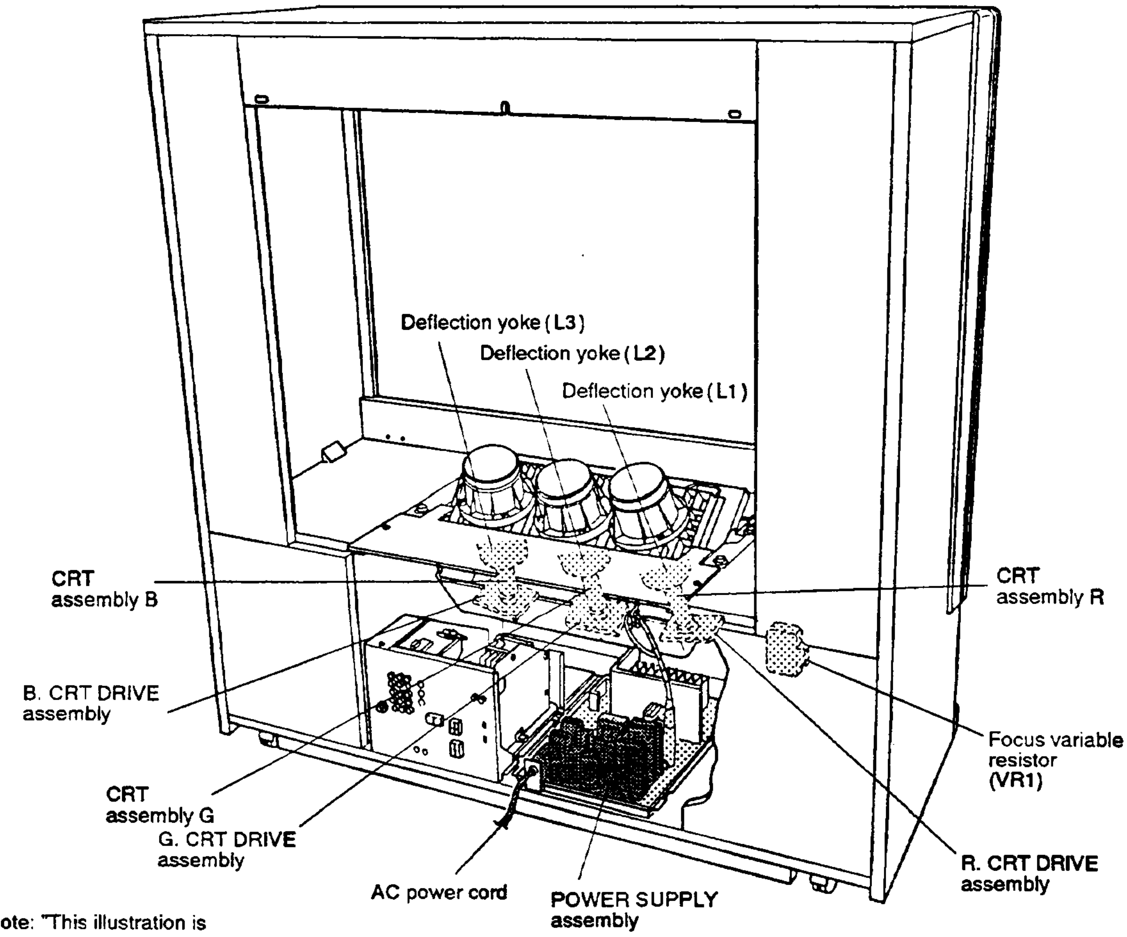
■ Charged section

(Power supply primary side)

1. The primary side of the POWER SUPPLY assembly
2. AC power cord

▓ part is the charged section.

░ part is the high voltage generating points other than the charged section.


Deflection yoke (L3)
Deflection yoke (L2)
Deflection yoke (L1)
CRT assembly B
CRT assembly R
B. CRT DRIVE assembly
Focus variable resistor (VR1)
CRT assembly G
G. CRT DRIVE assembly
R. CRT DRIVE assembly
AC power cord
POWER SUPPLY assembly

Note: This illustration is as SD-P5075-K.

Fig. 3-1 Charged section and high voltage generating point

■ High voltage generating point

The place where voltage of over 100V is generated.

1. Charged section	
2. POWER SUPPLY assembly (including FBT)	(30.5kV, 135V)
3. R. CRT DRIVE assembly	(10.5kV)
4. G. CRT DRIVE assembly	(10.5kV)
5. B. CRT DRIVE assembly	(10.5kV)
6. CRT assembly R	(30.5kV)
7. CRT assembly G	(30.5kV)
8. CRT assembly B	(30.5kV)
9. Focus variable resistor (VR1)	(10.5kV)
10. Deflection yokes (L1, L2, and L3)	(Approx. 1100V at peak)

■ X-ray protection

- Regarding the parts which are relative to radiation of X-rays (There is the danger to radiate X-ray from the individual CRT assembly R, G, B), there are notifications of caution in the individual schematic diagrams. Be sure to read them for safety's sake.
- The component parts for X-ray protection are as follows :When the current flows to the CRT assembly R, G, B, be sure to perform it with these parts being attached. Protection from the X-ray radiation is maintained in the state in which these parts have been installed to the CRT assembly R, G, B. Accordingly, never supply current only to the CRT assembly R, G, B.
  Moreover, the anode voltage of the CRT assembly R, G, B should always be kept not higher than the predetermined value (in the minimum brightness and picture state when non signal input is higher than 30.9kV). Be sure to drive the CRT assembly R, G, B by using a completely functional POWER SUPPLY assembly which have been adjusted completely in the combined state. (When the voltage abnormally becomes high, the X-ray protection circuit will operate.)

1. CRT assembly R, G, B(Do not dismantle CRT assemblies under any circumstances).
2. Each Lens assemblies

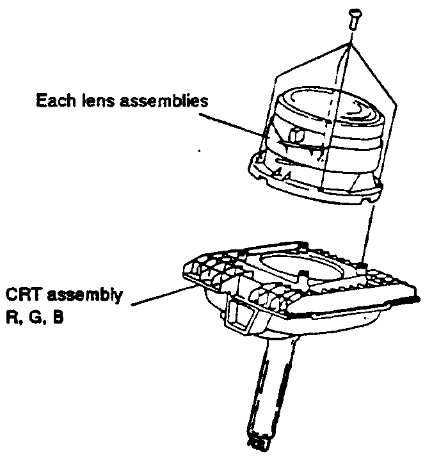


Fig. 3-2 Component parts for X-ray protection

4. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Parts marked by ☆ are important parts which relate to X-rays radiation.*
  If any of these parts need to be replaced, always replace with specified parts.

- *The model name is indicated with the family name as shown below.*
  The 75 family includes SD-P5075-K, SD-P5575-K and SD-P4575-K.
  The 73 family includes SD-P5073-K and SD-P4573-K.

(1) Parts List

Mark	No.	Description	Part No.
	1	TUNER-VIDEO ASSEMBLY (FOR 75 FAMILY)	AWV1368
	1	TUNER-VIDEO ASSEMBLY (FOR 73 FAMILY)	AWV1374
	1	TUNER-VIDEO ASSEMBLY (FOR PRO-97)	AWV1376
	2	CONVERGENCE ASSEMBLY	AWZ5142
	3	R. CRT DRIVE ASSEMBLY	AWZ5143
	4	G. CRT DRIVE ASSEMBLY	AWZ5144
	5	B. CRT DRIVE ASSEMBLY	AWZ5145
	6	AV I/O ASSEMBLY (FOR 75 AND 73 FAMILIES)	AWZ5146
	6	AV I/O ASSEMBLY(FOR PRO-97)	AWZ5227
	7	Y/C SELECTOR ASSEMBLY (FOR 75 AND 73 FAMILIES)	AWZ5147
	7	Y/C SELECTOR ASSEMBLY (FOR PRO-97)	AWZ5228
	8	W FRONT CONTROL ASSEMBLY (75 AND 73 FAMILIES ONLY)	AWZ5148
	9	W RECEIVER ASSEMBLY (75 AND 73 FAMILIES ONLY)	AWZ5149
	10	P IN P ASSEMBLY	AWZ5150
	11	P IN P SELECTOR ASSEMBLY	AWZ5151
	12	A CONNECTOR ASSEMBLY	AWZ5152
	13	B CONNECTOR ASSEMBLY	AWZ5153
	14	C CONNECTOR ASSEMBLY	AWZ5154
	15	D CONNECTOR ASSEMBLY	AWZ5155
	16	REGULATOR ASSEMBLY (73 FAMILY AND PRO-97 ONLY)	AWZ5158
	17	PRO S.G. ASSEMBLY (PRO-97 ONLY)	AWZ5159
	18	PRO EXT. SP ASSEMBLY (PRO-97 ONLY)	AWZ5160
	19	S FRONT CONTROL ASSEMBLY (PRO-97 ONLY)	AWZ5161
	20	S RECEIVER ASSEMBLY (PRO-97 ONLY)	AWZ5162
	21	FRONT INPUT ASSEMBLY (PRO-97 ONLY)	AWZ5163

Mark	No.	Description	Part No.
	22	AUDIO ASSEMBLY (75 FAMILY ONLY)	AWZ5156
	23	EXT SP ASSEMBLY (75 FAMILY ONLY)	AWZ5157
☆	24	POWER SUPPLY ASSEMBLY	AWV1383
	25	DOL. PRO. MOD. (75 FAMILY ONLY)	AXQ1009
⚠	26	VR1 FOCUS VR	ACX1082
⚠	27	L1-L3 DEFLECTION YOKE	ATL1086
	28	CONE SPEAKER	APV1021
	29	CONE SPEAKER (75 FAMILY ONLY)	APV1024
⚠	30	AC POWER CORD	ADG1058
NSP	31	CHASSIS R	ANA1165
NSP	32	CRT STAND(50) (FOR SD-P5075-K, SD-P5073-K AND PRO-97)	ANA1169
NSP	32	CRT STAND(55) (FOR SD-P5575-K)	ANA1170
NSP	32	CRT STAND(45) (FOR SD-P4575-K AND SD-P4573-K)	ANA1171
NSP	33	CRT STAND HOLDER L	ANA1173
NSP	34	CRT STAND HOLDER R	ANA1174
NSP	35	CHASSIS L	ANA1215
NSP	36	REAR PANEL (FOR 75 FAMILY)	ANC2153
NSP	36	REAR PANEL (FOR 73 FAMILY)	ANC2154
NSP	36	REAR PANEL (FOR PRO-97)	ANC1878
NSP	37	MIRROR HOLDER ASSEMBLY (EXCEPT SD-P5575-K)	ANG1271
NSP	38	VR HOLDER	ANG1404
NSP	39	DOLBY AMP STAND (75 FAMILY ONLY)	ANG1642
NSP	40	CORD PLATE	ANG1650
	41	UPPER METAL FRAME (FOR 75 AND 73 FAMILIES)	ANG1829
	41	UPPER METAL FRAME (FOR PRO-97)	ANG1446
NSP	42	UPPER CORNER STAY L (75 AND 73 FAMILIES ONLY)	ANG1830
NSP	43	UPPER CORNER STAY R (75 AND 73 FAMILIES ONLY)	ANG1831

Mark	No.	Description	Part No.
NSP	44	UNDER CORNER STAY L (75 AND 73 FAMILIES ONLY)	ANG1832
NSP	45	UNDER CORNER STAY R (75 AND 73 FAMILIES ONLY)	ANG1833
NSP	46	SCREEN HOLDER V(50) (FOR SD-P5075-K AND SD-P5073-K)	ANG1834
NSP	46	SCREEN HOLDER V(55) (FOR SD-P5575-K)	ANG1842
NSP	46	SCREEN HOLDER V (FOR SD-P4575-K AND SD-P4573-K)	ANG1841
NSP	47	SCREEN HOLDER H (FOR SD-P5075-K, SD-P5073-K AND SD-P5575-K)	ANG1843
NSP	47	SCREEN HOLDER H(45) (FOR SD-P4575-K AND SD-P4573-K)	ANG1844
NSP	48	PCB FRAME	ANG1849
NSP	49	DOLBY MOD. STAY	ANG1850
	50	RIVET	AEC-441
NSP	51	RUBBER CUSHION (EXCEPT SD-P5575-K)	AEC1124
	52	RUBBER CUSHION (EXCEPT SD-P5575-K)	AEC1125
NSP	53	CABINET WIRE HOLDER	AEC1263
NSP	54	CUSHION SHEET A (EXCEPT SD-P5575-K)	AEC1515
	55	AC CORD STOPPER	AEP-113
	56	BINDER	AEP-215
NSP	57	LEAD CLAMPER	AEP-329
	58	MIRROR(50) (EXCEPT SD-P5575-K)	AMR1521
	58	MIRROR(55) (SD-P5575-K)	AMR2421
☆	59	LENS ASSEMBLY(R) (FOR 75 AND 73 FAMILIES)	AMR2387
☆	59	LENS ASSEMBLY(G) (FOR PRO-97)	AMR2388
☆	60	LENS ASSEMBLY(G)	AMR2388
☆	61	LENS ASSEMBLY(B)	AMR2389
	62	LENTICULAR SHEET(50) (FOR SD-P5075-K AND SD-P5073-K)	AMR2559
	62	LENTICULAR SHEET(55) (FOR SD-P5575-K)	AMR2560
	62	LENTICULAR SHEET(45) (FOR SD-P4575-K AND SD-P4573-K)	AMR2558
	62	LENTICULAR SHEET(50) (FOR PRO-97)	AMR2575
	63	FRESNEL(50) (FOR SD-P5075-K AND SD-P5073-K)	AMR2596
	63	FRESNEL(55) (FOR SD-P5575-K)	AMR2557
	63	FRESNEL(45) (FOR SD-P4575-K AND SD-P4573-K)	AMR2555
	63	FRESNEL(50) (FOR PRO-97)	AMR2574
	64	SPACER (EXCEPT SD-P5575-K)	AED1078
	65	TAPPING SCREW(STEEL) (EXCEPT SD-P5575-K)	ABA1069
	65	SCREW (FOR SD-P5575-K)	VPZ40P160FZK

Mark	No.	Description	Part No.
	66	SCREW (FOR 75 FAMILY ONLY)	ABA1099
	67	SPECIAL SCREW	ABA1121
	68	SCREW	ABA1149
	69	SPECIAL SCREW	ABA1151
	70	SCREW(STEEL)	ABA1168
	71	SCREW	ABA1188
	72	M5 SCREW	ABA1189
	73	HEXAGONAL DUCT NUT	ABN-087
	74	SCREW	ABZ30P080FZK
NSP	75	CUSHION (75 FAMILY ONLY)	AEC1545
	76	SCREW	ABZ30P100FZK
	77	SCREW	ABZ30P120FZK
	78	SCREW	ACZ40P080FMC
	79	SCREW	AMZ40P080FZK
	80	SCREW	APZ30P080FZK
	81	SCREW	BBZ30P080FZK
	82	SCREW	BBZ30P120FZK
	83	SCREW	BPZ30P120FZK
	84	SCREW	BYC35P120FZB
	85	SCREW	BYC35P160FZK
	86	SCREW	BYC40P160FMC
	87	SCREW	FBT40P120FZK
	88	SCREW	OYC40P160FZK
	89	SCREW	VBT30P080FZK
	90	SCREW	VBZ30P200FMC
	91	SCREW	VCZ30P060FMC
	92	WASHER	WAX0F160N100
NSP	93	BLIND PLATE(FOR 75 FAMILY)	AMM2153
NSP	93	BLIND PLATE (FOR 73 FAMILY AND PRO-97)	AMM2154
NSP	94	TRAY	AMR2563
	95	DOOR (FOR SD-P5075-K)	AAN1381
	95	DOOR (FOR SD-P5073-K)	AAN1384
	95	DOOR (FOR SD-P5575-K)	AAN1387
	95	DOOR (FOR SD-P4575-K)	AAN1385
	95	DOOR (FOR SD-P4573-K)	AAN1386
	95	DOOR ASSEMBLY (FOR PRO-97)	AAN1389
	96	CONTROL PANEL (75 AND 73 FAMILIES ONLY)	AMB1793
	97	INDICATOR PANEL (75 AND 73 FAMILIES ONLY)	AAK2192
	98	CONTROL SHEET (FOR 75 FAMILY)	AAK2535
	98	CONTROL SHEET (FOR 73 FAMILY)	AAK2536
NSP	99	PIONEER BADGE (FOR 75 AND 73 FAMILIES)	AAM1056
NSP	99	PIONEER BADGE (FOR PRO-97)	AAM1062
	100	SCREEN FRAME H(50) (FOR SD-P5075-K AND SD-P5073-K)	AAP1380

Mark	No.	Description	Part No.
	100	SCREEN FRAME H(55) (FOR SD-P5575-K)	AAP1382
	100	SCREEN FRAME H(45) (FOR SD-P4575-K AND SD-P4573-K)	AAP1381
	101	SCREEN FRAME V ASSEMBLY(50) (FOR SD-P5075-K AND SD-P5073-K)	AAP1388
	101	SCREEN FRAME V ASSEMBLY(55) (FOR SD-P5575-K)	AAP1390
	101	SCREEN FRAME V ASSEMBLY(45) (FOR SD-P4575-K AND SD-P4573-K)	AAP1389
	102	SIDE CABINET SASH ASSEMBLY(50) (FOR SD-P5075-K AND SD-P5073-K)	AAP1396
	102	SIDE CABINET SASH ASSEMBLY(55) (FOR SD-P5575-K)	AAP1398
	102	SIDE CABINET SASH ASSEMBLY(45) (FOR SD-P4575-K AND SD-P4573-K)	AAP1397
NSP	103	MIRROR CASE(50) (EXCEPT SD-P5575-K)	AME1019
NSP	103	MIRROR CASE(55) (FOR SD-P5575-K)	AME1080
NSP	104	FRONT COVER PANEL (FOR 75 AND 73 FAMILIES)	AMM2115
NSP	104	FRONT COVER PANEL (FOR PRO-97)	AMM2208
NSP	105	BACK COVER PANEL (FOR SD-P5075-K AND SD-P5073-K)	AMM2129
NSP	105	BACK COVER PANEL (FOR SD-P5575-K)	AMM2114
NSP	105	BACK COVER PANEL (FOR SD-P4575-K AND SD-P4573-K)	AMM2128
NSP	105	BACK COVER PANEL(50) (FOR PRO-97)	AMM2209
	106	BACK PANEL	AMM2157
	107	GRILLE 50 (FOR SD-P5075-K AND SD-P5073-K)	AMR2539
	107	GRILLE 55 (FOR SD-P5575-K)	AMR2541
	107	GRILLE 45 (FOR SD-P4575-K AND SD-P4573-K)	AMR2540
	107	GRILLE(50) (FOR PRO-97)	AMR2175
	108	CATCHER	AEC1012
NSP	109	CATCHER B	AEC1507
	110	OPERATING INSTRUCTIONS (ENGLISH)(FOR 75 AND 73 FAMILIES)	ARB1464
	110	OPERATING INSTRUCTIONS (ENGLISH)(FOR PRO-97)	ARB1449
	111	ATTENTION CARD	ARM1054
	112	REMOTE CONTROL UNIT (CU-SD075) (FOR 75 FAMILY)	AXD1351
	112	REMOTE CONTROL UNIT (CU-SD076) (FOR 73 FAMILY)	AXD1352
	112	REMOTE CONTROL UNIT (CU-SD074) (FOR PRO-97)	AXD1353
NSP	113	ALKALINE DRY CELL BATTERY (LR6, AA)	AEX1018
	114	UPPER PAD L (FOR 75 AND 73 FAMILIES)	AHA1592
	114	UPPER PAD L (FOR PRO-97)	AHA1510
	115	UPPER PAD R (FOR 75 AND 73 FAMILIES)	AHA1593
	115	UPPER PAD R (FOR PRO-97)	AHA1511
NSP	116	CU PACKING CASE	AHC1019
	117	UPPER CARTON(50) (FOR SD-P5075-K)	AHD2568
	117	UPPER CARTON(50) (FOR SD-P5073-K)	AHD2569
	117	UPPER CARTON(55) (FOR SD-P5575-K)	AHD2572
	117	UPPER CARTON(45) (FOR SD-P4575-K)	AHD2570
	117	UPPER CARTON(45) (FOR SD-P4573-K)	AHD2571
	117	UPPER CARTON(50) (FOR PRO-97)	AHD2595
NSP	118	VINYL SHEET XL	AHG1095
NSP	119	PACKING SHEET (EXCEPT SD-P5575-K AND PRO-97)	AHG1156
NSP	119	PACKING SHEET (FOR SD-P5575-K)	AHG1103
NSP	119	PACKING SHEET(50, 45) (FOR PRO-97)	AHG1120
	120	UNDER PAD L (FOR 75 AND 73 FAMILIES)	AHA1608
	120	UNDER PAD L (FOR PRO-97)	AHA1637
	121	UNDER PAD R (FOR 75 AND 73 FAMILIES)	AHA1609
	121	UNDER PAD R (FOR PRO-97)	AHA1638
	122	CUSHION(FOR UNDER CARTON) (EXCEPT SD-P5575-K)	AHA1649
	123	UNDER CARTON(50) (FOR SD-P5075-K AND SD-P5073-K)	AHD2541
	123	UNDER CARTON(55) (FOR SD-P5575-K)	AHD2573
	123	UNDER CARTON(45) (FOR SD-P4575-K AND SD-P4573-K)	AHD2539
	123	UNDER CARTON(50) (FOR PRO-97)	AHD2596
NSP	124	PACKING SHEET (EXCEPT SD-P5575-K AND PRO-97)	AHG1156
NSP	124	PACKING SHEET (FOR SD-P5575-K AND PRO-97)	AHG1103
NSP	125	VINYL SHEET M	AHG1094
	126	CASTER	AMR2547
	127	SCREW	ABA1126
NSP	128	PCB HOLDER (73 FAMILY AND PRO-97 ONLY)	ANG1870

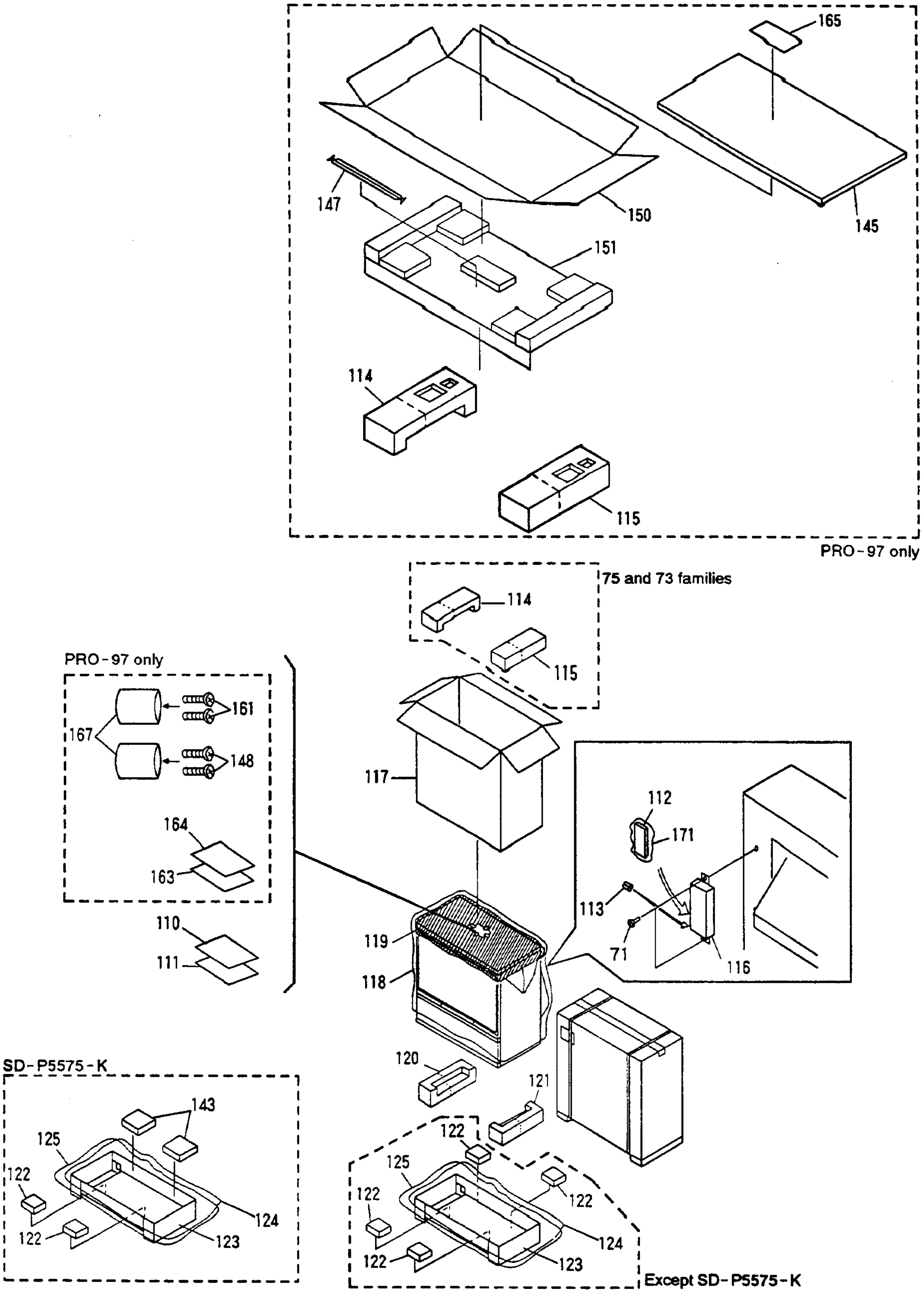
Mark	No.	Description	Part No.
NSP	129	MIRROR HOLDER CUSHION (SD-P5575-K ONLY)	AEC1526
NSP	130	SCREEN SPACER L (SD-P4575-K AND SD-P4573-K ONLY)	AEC1516
NSP	131	SCREEN SPACER R (SD-P4575-K AND SD-P4573-K ONLY)	AEC1517
	132	MIRROR HOLDER(55) (SD-P5575-K ONLY)	AMR2416
	133	MIRROR SIDE HOLDER L (SD-P5575-K ONLY)	AMR2470
	134	MIRROR SIDE HOLDER R (SD-P5575-K ONLY)	AMR2471
	135	SCREW (SD-P5575-K ONLY)	VPZ40P160FZK
☆⚠	136	CRT ASSEMBLY(R) (FOR SD-P5075-K AND SD-P5073-K)	AWY1207
☆⚠	136	CRT ASSEMBLY(R) (FOR SD-P5575-K)	AWY1209
☆⚠	136	CRT ASSEMBLY(R) (FOR SD-P4575-K AND SD-P4573-K)	AWY1211
☆⚠	136	CRT ASSEMBLY 50(R) (FOR PRO-97)	AWY1219
☆⚠	137	CRT ASSEMBLY(G) (FOR SD-P5075-K, SD-P5073-K AND SD-P5575-K)	AWY1206
☆⚠	137	CRT ASSEMBLY(G) (FOR SD-P4575-K AND SD-P4573-K)	AWY1231
☆⚠	137	CRT ASSEMBLY(G) (FOR PRO-97)	AWY1218
☆⚠	138	CRT ASSEMBLY(B) (FOR SD-P5075-K AND SD-P5073-K)	AWY1208
☆⚠	138	CRT ASSEMBLY(B) (FOR SD-P5575-K)	AWY1210
☆⚠	138	CRT ASSEMBLY(B) (FOR SD-P4575-K AND SD-P4573-K)	AWY1212
☆⚠	138	CRT ASSEMBLY 50(B) (FOR PRO-97)	AWY1220
⚠	139	FUSE(8A/125V, FU101)	AEK1002
⚠	140	FUSE (6.3A/125V, FU102-FU104)	AEK-309
⚠	141	FUSE(4A/125V, FU105)	AEK1018
	142	• • • • •	
	143	REAR CUSHION(55) (SD-P5575-K ONLY)	AHA1651
NSP	144	CONVERGENCE STAY	AND1058
NSP	145	ACRYLIC PANEL ASSEMBLY(50) (PRO-97 ONLY)	AAK2489
	146	SCREEN FRAME ASSEMBLY(50) (PRO-97 ONLY)	AAP1403
	147	FRAME COVER ASSEMBLY(50) (PRO-97 ONLY)	AAP1406
	148	SCREW (PRO-97 ONLY)	ABA1195
NSP	149	CABINET CUSHION (PRO-97 ONLY)	AEC1523
NSP	150	CORRUGATED PAPER CASE(50) (PRO-97 ONLY)	AHB1115
NSP	151	CORRUGATED PAPER SPACER(50) (PRO-97 ONLY)	AHB1116

Mark	No.	Description	Part No.
	152	SIDE PANEL ASSEMBLY (PRO-97 ONLY)	AMB1545
	153	FRONT PANEL ASSEMBLY (PRO-97 ONLY)	AMB2165
	154	SIDE PANEL ASSEMBLY(L) (PRO-97 ONLY)	AMB2166
	155	BNC CAP (PRO-97 ONLY)	AMR2314
	156	SIDE COVER (PRO-97 ONLY)	AMR2573
NSP	157	FIXING HOLDER(UPPER)(50) (PRO-97 ONLY)	ANG1589
NSP	158	FIXING HOLDER(UNDER) ASSEMBLY(50) (PRO-97 ONLY)	ANG1590
NSP	159	CATCHER A (PRO-97 ONLY)	ANZ-241
NSP	160	BNC SOCKET (PRO-97 ONLY)	AKX1036
	161	SCREW (PRO-97 ONLY)	BMZ40P180FZK
	162	SCREW (PRO-97 ONLY)	BYC40P200FMC
	163	TECHNICAL NOTE (PRO-97 ONLY)	ARB1450
	164	ATTENTION CARD(ELITE) (PRO-97 ONLY)	ARM1086
	165	ACRYLIC CAUTION CARD (PRO-97 ONLY)	ARH1133
	166	• • • • •	
	167	POLYETHELENE BAG (PRO-97 ONLY)	AHG1076
	168	CONE SPEAKER(TWEETER) (PRO-97 ONLY)	APT1004
	169	HOLDER A	ANG1876
	170	HOLDER C	ANG1878
	171	VINYL BAG (FOR 75 FAMILY)	AZE1091
	171	VINYL BAG (FOR 73 FAMILY)	AZE1095
	171	VINYL BAG (FOR PRO-97)	AZE1096

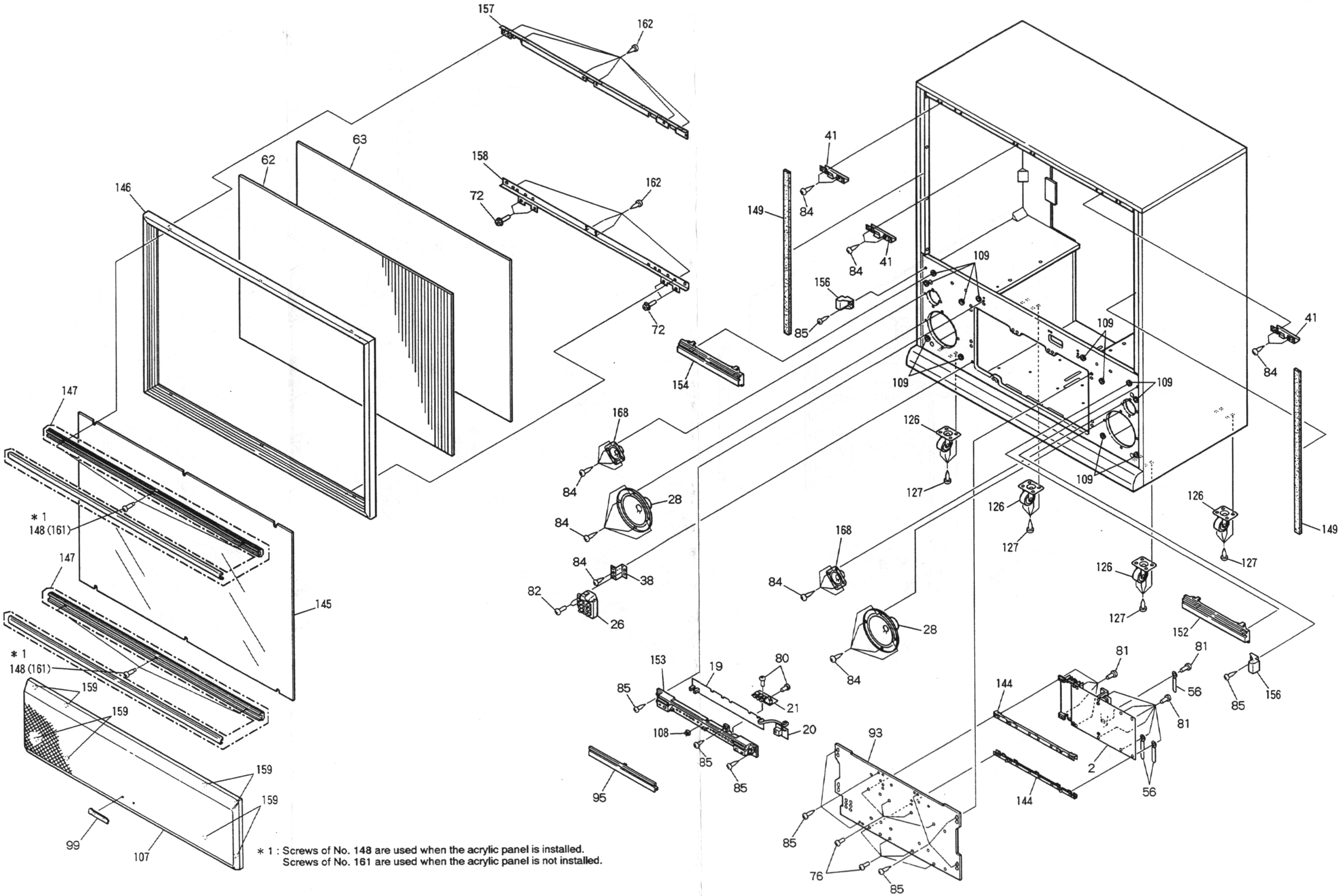
• How to remove a side cabinet sash (No. 102) (for all models)

A side cabinet sash is attached to the cabinet with the adhesive double-coated tape, and it is hard to remove from the outside. Push the side cabinet sash thorough a hole on the rear of the sash from inside the cabinet, and remove the sash. For the position of the hole, see "(3) FRONT VIEW."

(2) PACKING


PRO-97 only
75 and 73 families
PRO-97 only
SD-P5575-K
Except SD-P5575-K

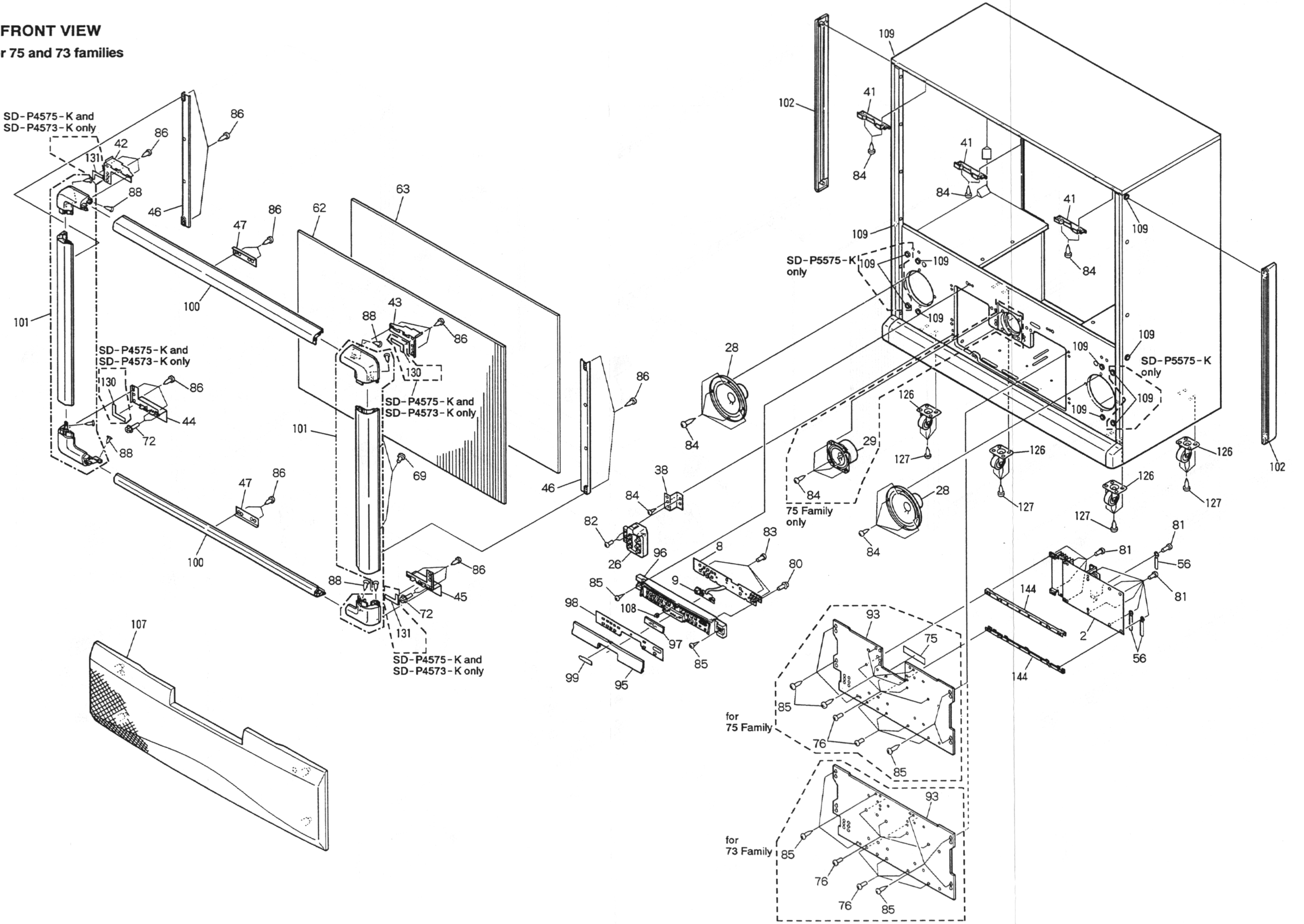
• For PRO-97

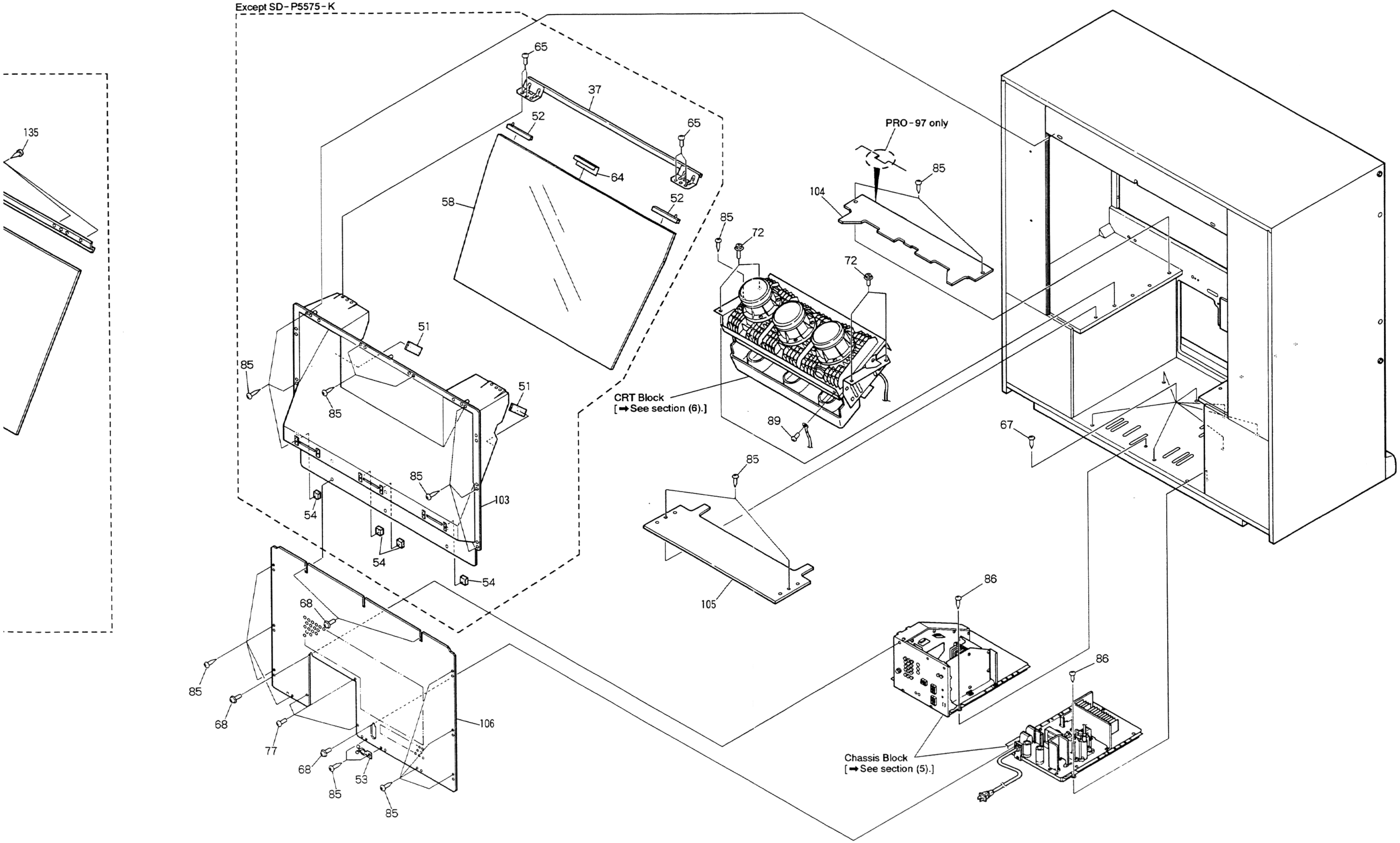

157
162
63
62
158
162
72
146
72
154
41
84
149
84
41
109
156
85
41
84
109
109
109
126
127
109
147
168
84
28
84
*1
148 (161)
147
145
84
38
82
26
168
84
28
126
127
126
127
126
127
149
152
*1
148 (161)
159
159
159
159
99
107
153
19
80
85
21
20
108
85
85
95
84
93
144
81
81
56
81
85
156
2
144
56
85
76
85

∗1 : Screws of No. 148 are used when the acrylic panel is installed.
Screws of No. 161 are used when the acrylic panel is not installed.

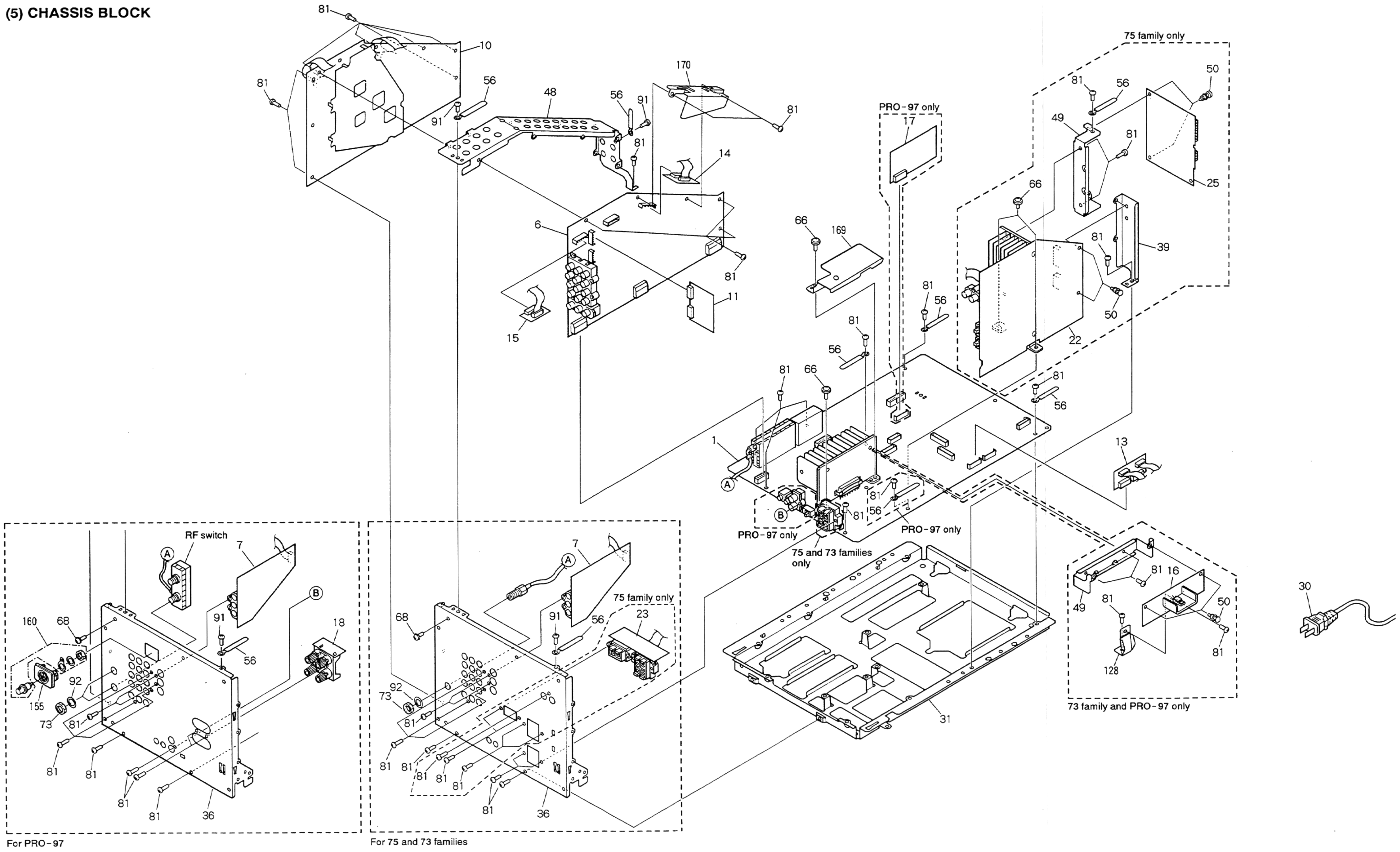
(3) FRONT VIEW

- **For 75 and 73 families**


SD-P4575-K and
SD-P4573-K only
42
131
86
88
46
101
86
47
86
62
63
100
88
43
86
130
SD-P4575-K and
SD-P4573-K only
SD-P4575-K and
SD-P4573-K only
130
86
44
72
88
101
69
86
46
47
86
100
88
86
45
72
131
SD-P4575-K and
SD-P4573-K only
107
102
109
41
84
41
84
41
84
109
109
SD-P5575-K
only
109
109
109
84
28
109
109
109
SD-P5575-K
only
109
84
126
127
29
84
75 Family
only
28
84
126
127
126
127
126
127
102
38
84
82
26
96
83
8
80
9
85
98
108
97
85
99
95
81
81
56
81
144
2
56
144
93
75
85
for
75 Family
76
85
93
for
73 Family
85
76
76
85


Except SD-P5575-K
PRO-97 only
CRT Block
[➡See section (6).]
Chassis Block
[➡See section (5).]

(5) CHASSIS BLOCK

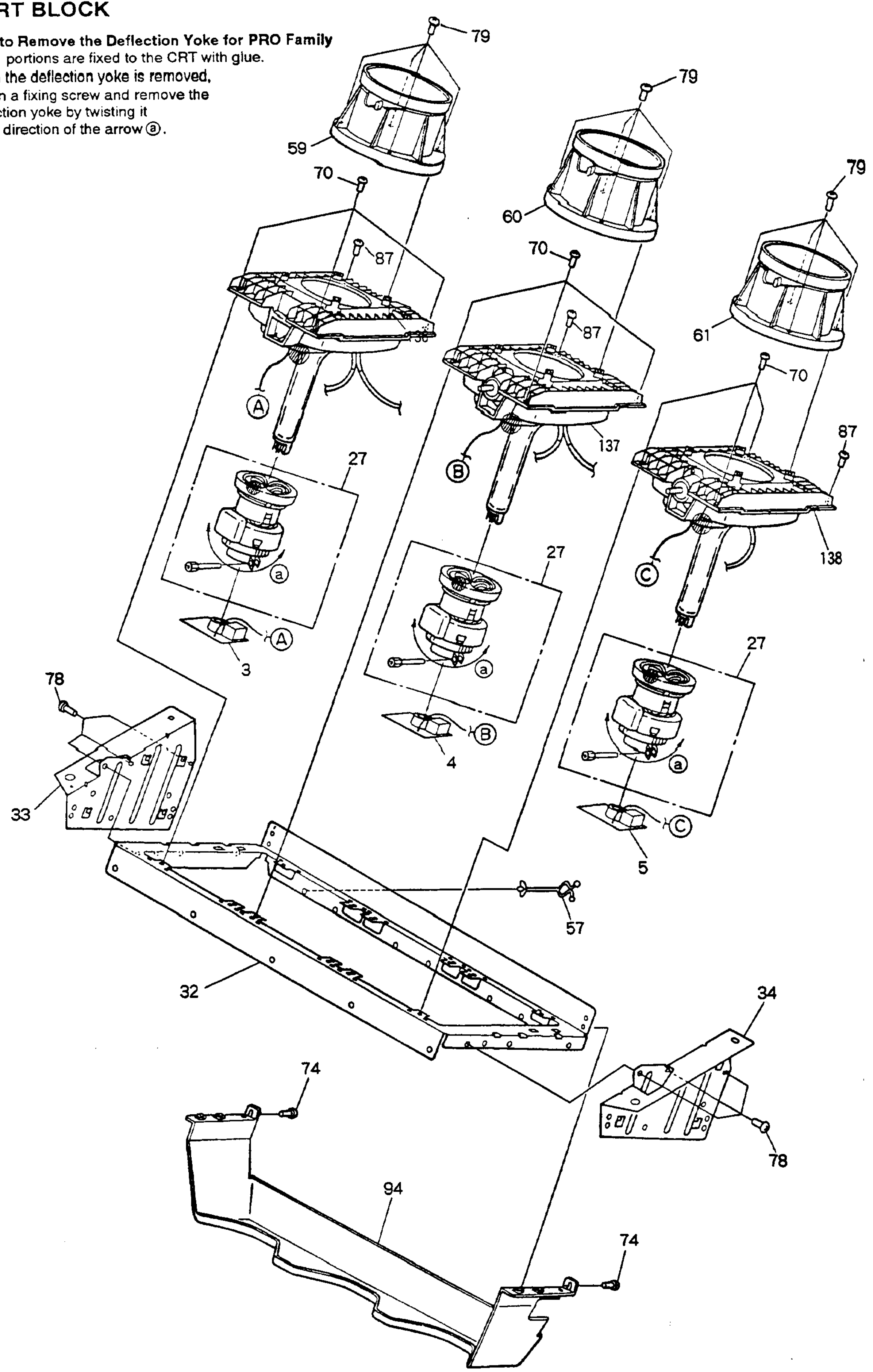

81
10
81
56
91
48
56
91
170
81
81
14
PRO-97 only
17
75 family only
50
81
56
49
81
25
66
6
81
11
15
66
169
81
39
50
22
81
56
81
56
81
66
81
56
1
Ⓐ
Ⓑ
81
56
81
PRO-97 only
PRO-97 only
75 and 73 families only
13
RF switch
Ⓐ
7
Ⓑ
160
68
91
56
18
92
155
73
81
81
81
81
81
36
For PRO-97
7
Ⓐ
75 family only
23
68
91
56
92
73
81
81
81
81
81
81
81
36
For 75 and 73 families
31
81
16
49
81
50
128
81
73 family and PRO-97 only
30

(6) CRT BLOCK

- **How to Remove the Deflection Yoke for PRO Family**

  ▨ portions are fixed to the CRT with glue.

  When the deflection yoke is removed,
  loosen a fixing screw and remove the
  deflection yoke by twisting it
  in the direction of the arrow ⓐ.


79
79
79
59
60
61
70
70
70
87
87
87
36
137
138
Ⓐ
Ⓑ
Ⓒ
27
27
27
ⓐ
ⓐ
ⓐ
Ⓐ
Ⓑ
Ⓒ
3
4
5
78
33
57
32
34
78
74
94
74

5. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTES:

- *The model name is indicated with the family name as shown below .*

The 75 family includes SD-P5075-K, SD-P5575-K and SD-P4575-K.
The 73 family includes SD-P5073-K and SD-P4573-K.

NOTE FOR SCHEMATIC DIAGRAMS (Type 5A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. **RESISTORS:**
Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance:(F): ± 1%, (G): ± 2%, (K): ± 10%, (M): ± 20% or ± 5% unless otherwise noted.

4. **CAPACITORS:**
Unit : p:pF or μF unless otherwise noted.
Ratings : capacitor (μF) / voltage (V) unless otherwise noted.
Rated voltage : 50V except for electrolytic capacitors.

5. **COILS:**
Unit : m:mH or μH unless otherwise noted.

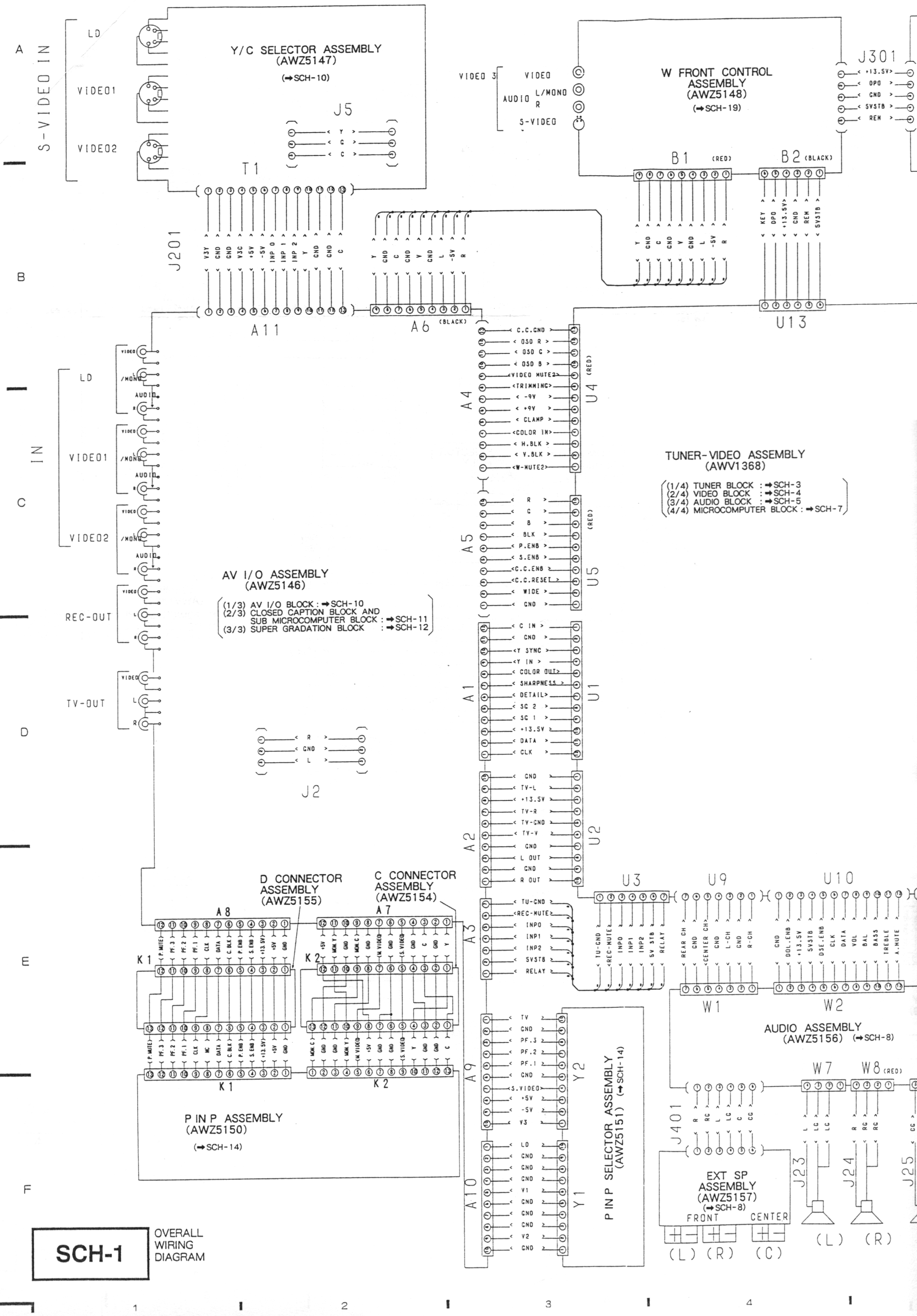
6. **VOLTAGE AND CURRENT:**
▭ or ←V :
DC voltage (V) at no input signal unless otherwise noted.
Value in (   ) is DC voltage at color bar signal input state.
⇦mA or ←mA :
DC current at no input signal unless otherwise noted.

7. **OTHERS:**
- ⊘ or ⊘ : Adjusting point.
- ◀ : Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by ☆ are important parts which relate to X-rays radiation. If any of these parts needs to be replaced, always replace with specified parts.
- Parts marked by × are important parts which relate to X-rays radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by × is replaced, there is danger of being exposed to X-rays.

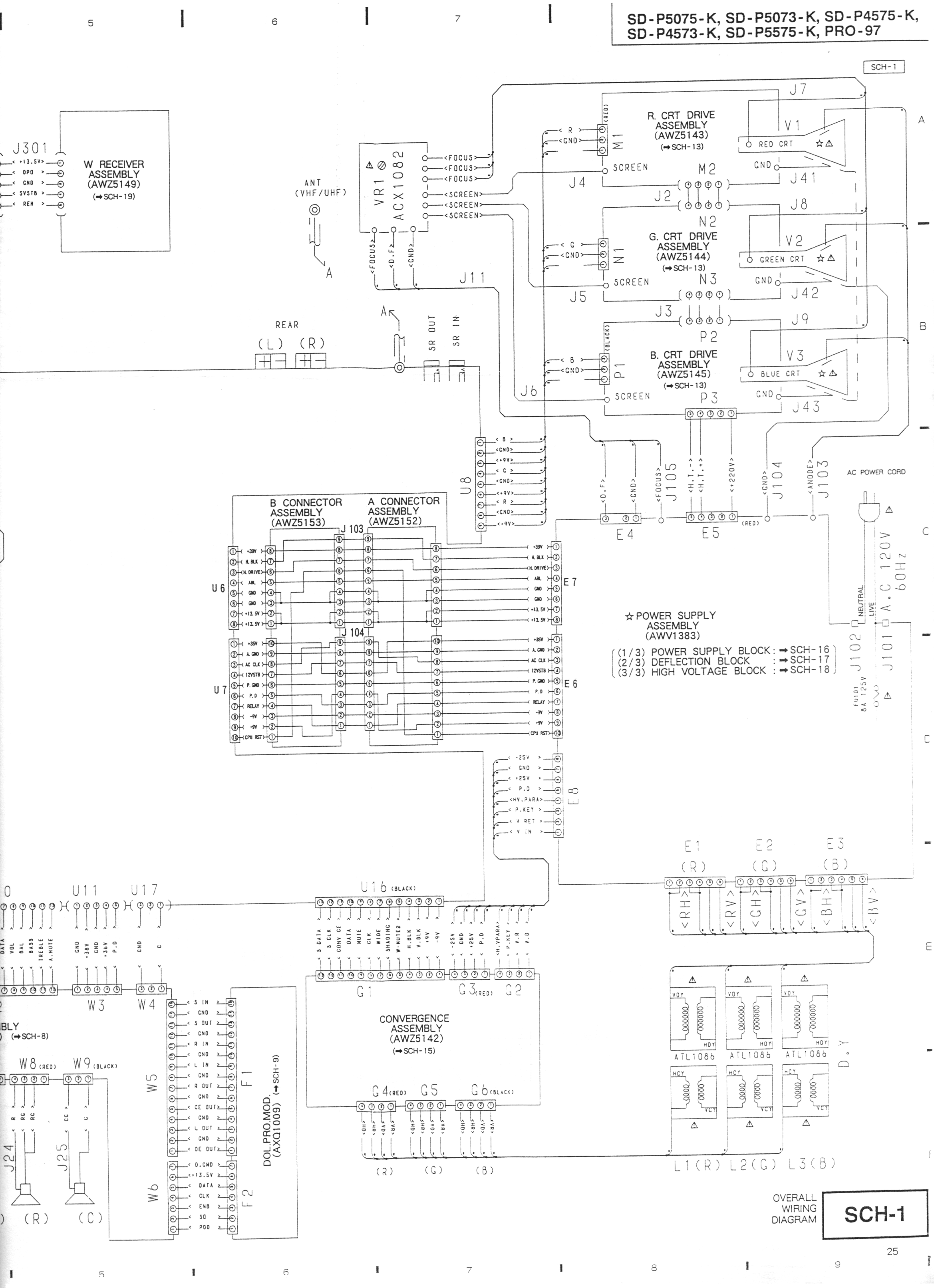
8. **SCH - □ ON THE SCHEMATIC DIAGRAM:**
- SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. **SWITCHES** (Underline indicates switch position):
TUNER-VIDEO assembly
S1401 : SP SELECT INT – EXT (73 family and PRO-97 only)
S1301 : RF switch (PRO-97 only)
W FRONT CONTROL assembly (75 and 73 families only)
S2801 : POWER
S2802 : □□ MODE
S2803 : DIGITAL PINP ON/OFF
S2804 : DIGITAL PINP INPUT
S2805 : STD/AV MEM
S2806 : RETURN
S2807 : FACTORY ADJ
S2808 : CHANNEL +
S2809 : VOLUME –
S2810 : VOLUME +
S2811 : INPUT SELECTOR
S2812 : CHANNEL –
S FRONT CONTROL assembly (PRO-97 only)
S2841 : POWER
S2842 : DIGITAL PINP ON/OFF
S2843 : DIGITAL PINP INPUT
S2844 : STD/AV MEM
S2845 : RETURN
S2846 : FACTORY ADJ
S2847 : CHANNEL +
S2848 : VOLUME –
S2849 : VOLUME +
S2850 : ANTENNA
S2851 : INPUT SELECTOR
S2852 : CHANNEL –
AUDIO assembly (75 family only)
S401: FRONT SPEAKER SELECTOR INT – EXT
S402: CENTER SPEAKER SELECTOR INT – EXT

5.1 OVERALL WIRING DIAGRAM (75 FAMILY)


1
2
3
4
A
B
C
D
E
F
S-VIDEO IN
LD
VIDEO1
VIDEO2
Y/C SELECTOR ASSEMBLY
(AWZ5147)
(➡SCH-10)
J5
< Y >
< C >
< C >
T1
J201
V3Y
GND
GND
V3C
+5V
-5V
INP 0
INP 1
INP 2
Y
GND
C
A11
A6 (BLACK)
Y
GND
C
GND
Y
GND
L
-5V
R
VIDEO 3
VIDEO
AUDIO L/MONO
R
S-VIDEO
W FRONT CONTROL
ASSEMBLY
(AWZ5148)
(➡SCH-19)
J301
< +13.5V >
< DPO >
< GND >
< SVSTB >
< REM >
B1 (RED)
B2 (BLACK)
KEY
DPO
+13.5V
GND
REM
SVSTB
U13
IN
LD
VIDEO
/MONO
AUDIO
R
VIDEO1
VIDEO2
REC-OUT
L
TV-OUT
A4
U4 (RED)
C.C.GND
OSD R
OSD G
OSD B
VIDEO MUTE2
TRIMMING
-9V
+9V
CLAMP
COLOR IN
H.BLK
V.BLK
W-MUTE2
A5
U5 (RED)
R
G
B
BLK
P.ENB
S.ENB
C.C.ENB
C.C.RESET
WIDE
GND
TUNER-VIDEO ASSEMBLY
(AWV1368)
(1/4) TUNER BLOCK : ➡SCH-3
(2/4) VIDEO BLOCK : ➡SCH-4
(3/4) AUDIO BLOCK : ➡SCH-5
(4/4) MICROCOMPUTER BLOCK : ➡SCH-7
AV I/O ASSEMBLY
(AWZ5146)
(1/3) AV I/O BLOCK : ➡SCH-10
(2/3) CLOSED CAPTION BLOCK AND SUB MICROCOMPUTER BLOCK : ➡SCH-11
(3/3) SUPER GRADATION BLOCK : ➡SCH-12
A1
U1
C IN
GND
Y SYNC
Y IN
COLOR OUT
SHARPNESS
DETAIL
SC 2
SC 1
+13.5V
DATA
CLK
J2
R
GND
L
A2
U2
GND
TV-L
+13.5V
TV-R
TV-GND
TV-V
GND
L OUT
GND
R OUT
D CONNECTOR
ASSEMBLY
(AWZ5155)
C CONNECTOR
ASSEMBLY
(AWZ5154)
A8
A7
K1
K2
P.MUTE
PF.3
PF.2
PF.1
CLK
DATA
NC
C.BLK
P.ENB
S.ENB
+13.5V
+5V
GND
MON Y
MON C
M.VIDEO
S.VIDEO
C
Y
A3
TU-GND
REC-MUTE
INP0
INP1
INP2
SVSTB
RELAY
U3
U9
U10
TU-GND
REC-MUTE
INP0
INP1
INP2
SV STB
RELAY
REAR CH
GND
CENTER CH
GND
L-CH
GND
R-CH
GND
DOL.ENB
+13.5V
SVSTB
DSE.ENB
CLK
DATA
VOL
BAL
BASS
TREBLE
A.MUTE
W1
W2
AUDIO ASSEMBLY
(AWZ5156) (➡SCH-8)
A9
Y2
TV
GND
PF.3
PF.2
PF.1
GND
S.VIDEO
+5V
-5V
V3
P IN P ASSEMBLY
(AWZ5150)
(➡SCH-14)
P IN P SELECTOR ASSEMBLY
(AWZ5151) (➡SCH-14)
A10
Y1
LD
GND
GND
GND
V1
GND
GND
GND
V2
GND
J401
R
RC
L
LC
C
CC
W7
W8 (RED)
L
LC
LC
R
RC
RC
CC
EXT SP
ASSEMBLY
(AWZ5157)
(➡SCH-8)
FRONT
CENTER
(L)
(R)
(C)
J23
J24
J25
(L)
(R)

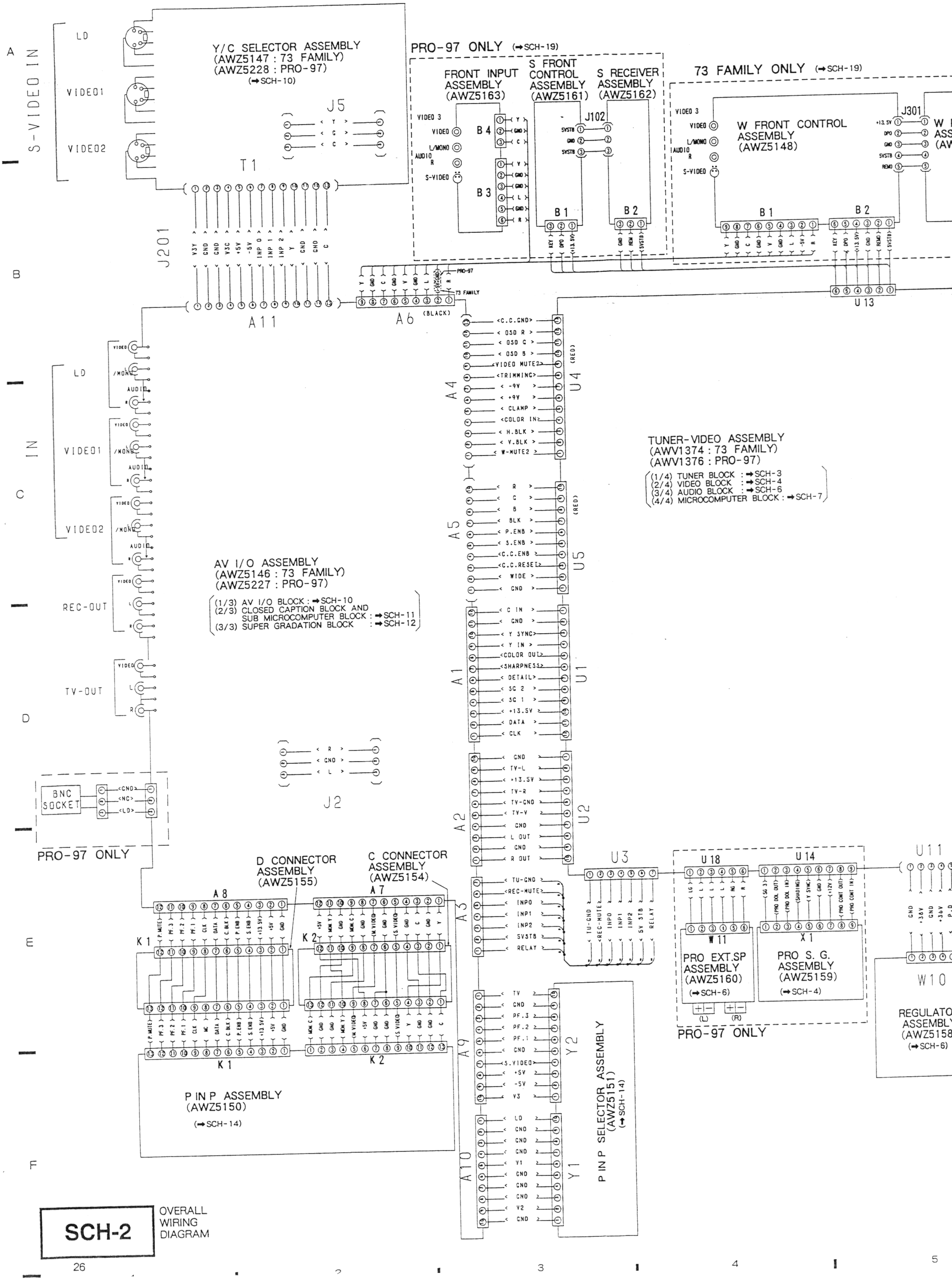
SCH-1 OVERALL WIRING DIAGRAM


5
6
7
J301
W RECEIVER ASSEMBLY (AWZ5149) (→SCH-19)
< +13.5V >
< DPO >
< GND >
< SVSTB >
< REM >
ANT (VHF/UHF)
VR1 ACX1082
<FOCUS>
<SCREEN>
<D.F2>
<GND>
J11
A
REAR
(L) (R)
SR OUT
SR IN
J7
R. CRT DRIVE ASSEMBLY (AWZ5143) (→SCH-13)
M1
(RED)
< R >
< GND >
SCREEN
M2
J4
J2
V1
RED CRT
GND
J41
J8
N2
G. CRT DRIVE ASSEMBLY (AWZ5144) (→SCH-13)
N1
< G >
V2
GREEN CRT
N3
J5
J42
J3
J9
P2
B. CRT DRIVE ASSEMBLY (AWZ5145) (→SCH-13)
P1
(BLACK)
< B >
V3
BLUE CRT
J6
P3
J43
U8
< B >
<GND>
<+9V>
< G >
< R >
<D.F>
<GND>
<FOCUS>
J105
<H.T.->
<H.T.+>
<+220V>
<GND>
J104
<ANODE>
J103
AC POWER CORD
E4
E5
(RED)
A.C 120V 60Hz
NEUTRAL
LIVE
J102
J101
FU101 8A 125V
B CONNECTOR ASSEMBLY (AWZ5153)
A CONNECTOR ASSEMBLY (AWZ5152)
J 103
J 104
U6
U7
E7
E6
+39V
H. BLK
H. DRIVE
ABL
GND
+13.5V
+35V
A. GND
AC CLK
12VSTB
P. GND
P. D
RELAY
-9V
+9V
CPU RST
☆POWER SUPPLY ASSEMBLY (AWV1383)
(1/3) POWER SUPPLY BLOCK : →SCH-16
(2/3) DEFLECTION BLOCK : →SCH-17
(3/3) HIGH VOLTAGE BLOCK : →SCH-18
E8
< -25V >
< GND >
< +25V >
< P.D >
<HV.PARA>
< P.KEY >
< V RET >
< V IN >
E1 (R)
E2 (G)
E3 (B)
<RH>
<RV>
<GH>
<GV>
<BH>
<BV>
U11
U17
U16 (BLACK)
DATA
VOL
BAL
BASS
TREBLE
A.MUTE
GND
+36V
P.D
C
S DATA
S CLK
CONV CE
MUTE
CLK
WIDE
SHADING
W-MUTE2
H.BLK
V.BLK
+9V
-9V
H.VPARA
P.KEY
V.R
V.D
G1
G3 (RED)
G2
W3
W4
W5
W6
F1
F2
S IN
S OUT
R IN
L IN
R OUT
CE OUT
L OUT
DE OUT
D.GND
+13.5V
DATA
CLK
ENB
SO
POD
DOL.PRO.MOD. (AXQ1009) (→SCH-9)
CONVERGENCE ASSEMBLY (AWZ5142) (→SCH-15)
G4 (RED)
G5
G6 (BLACK)
<HD>
<HR>
<VD>
<VR>
(R) (G) (B)
VDY
HDY
HCY
VCY
ATL1086
D.Y
L1(R) L2(G) L3(B)
BLY
(→SCH-8)
W8 (RED)
W9 (BLACK)
R
RG
CC
J24
J25
(R) (C)
A
B
C
D
E
F
8
9

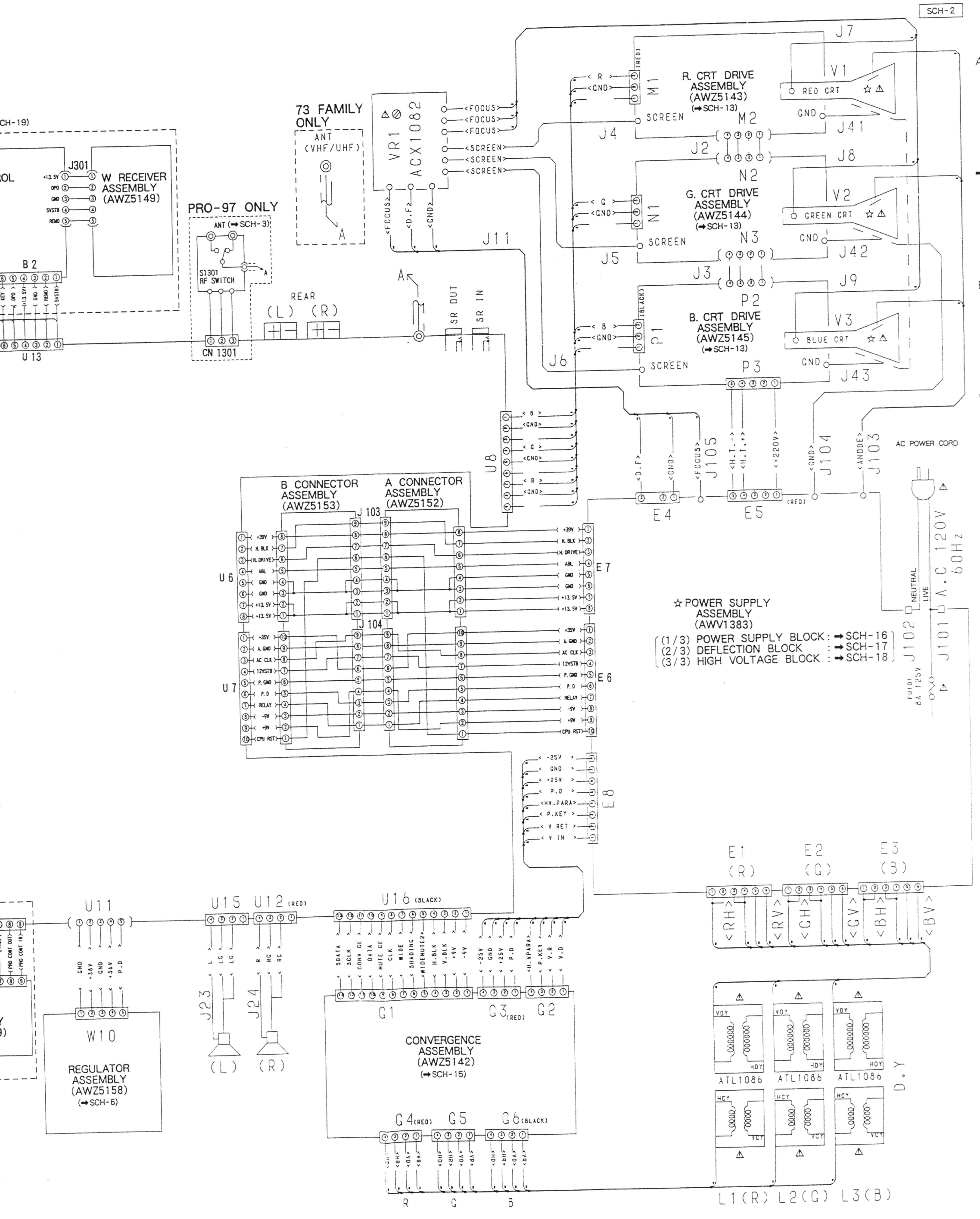
OVERALL WIRING DIAGRAM

SCH-1

5.2 OVERALL WIRING DIAGRAM (73 FAMILY AND PRO-97)


S-VIDEO IN
LD
VIDEO1
VIDEO2
Y/C SELECTOR ASSEMBLY
(AWZ5147 : 73 FAMILY)
(AWZ5228 : PRO-97)
(➡SCH-10)
J5
T1
J201
PRO-97 ONLY (➡SCH-19)
FRONT INPUT ASSEMBLY (AWZ5163)
S FRONT CONTROL ASSEMBLY (AWZ5161)
S RECEIVER ASSEMBLY (AWZ5162)
J102
B4
B3
B1
B2
73 FAMILY ONLY (➡SCH-19)
W FRONT CONTROL ASSEMBLY (AWZ5148)
J301
U13
A11
A6
(BLACK)
A4
U4
(RED)
A5
U5
A1
U1
A2
U2
A3
U3
TUNER-VIDEO ASSEMBLY
(AWV1374 : 73 FAMILY)
(AWV1376 : PRO-97)
(1/4) TUNER BLOCK : ➡SCH-3
(2/4) VIDEO BLOCK : ➡SCH-4
(3/4) AUDIO BLOCK : ➡SCH-6
(4/4) MICROCOMPUTER BLOCK : ➡SCH-7
IN
REC-OUT
TV-OUT
AV I/O ASSEMBLY
(AWZ5146 : 73 FAMILY)
(AWZ5227 : PRO-97)
(1/3) AV I/O BLOCK : ➡SCH-10
(2/3) CLOSED CAPTION BLOCK AND SUB MICROCOMPUTER BLOCK : ➡SCH-11
(3/3) SUPER GRADATION BLOCK : ➡SCH-12
J2
BNC SOCKET
PRO-97 ONLY
D CONNECTOR ASSEMBLY (AWZ5155)
C CONNECTOR ASSEMBLY (AWZ5154)
A8
A7
K1
K2
P IN P ASSEMBLY (AWZ5150) (➡SCH-14)
A9
Y2
A10
Y1
P IN P SELECTOR ASSEMBLY (AWZ5151) (➡SCH-14)
U18
U14
W11
X1
PRO EXT.SP ASSEMBLY (AWZ5160) (➡SCH-6)
PRO S. G. ASSEMBLY (AWZ5159) (➡SCH-4)
PRO-97 ONLY
U11
W10
REGULATO ASSEMBLY (AWZ5158) (➡SCH-6)
A
B
C
D
E
F
3
4
5

SCH-2 OVERALL WIRING DIAGRAM


R. CRT DRIVE ASSEMBLY (AWZ5143) (➡SCH-13)
G. CRT DRIVE ASSEMBLY (AWZ5144) (➡SCH-13)
B. CRT DRIVE ASSEMBLY (AWZ5145) (➡SCH-13)
RED CRT
GREEN CRT
BLUE CRT
V1
V2
V3
J7
J8
J9
J41
J42
J43
M1
M2
N1
N2
N3
P1
P2
P3
J2
J3
J4
J5
J6
J11
SCREEN
GND
<FOCUS>
<SCREEN>
<D.F>
VR1 ACX1082
73 FAMILY ONLY
ANT (VHF/UHF)
PRO-97 ONLY
ANT (➡SCH-3)
S1301 RF SWITCH
CN 1301
REAR
(L) (R)
SR OUT
SR IN
W RECEIVER ASSEMBLY (AWZ5149)
J301
B2
U13
(SCH-19)
U8
B CONNECTOR ASSEMBLY (AWZ5153)
A CONNECTOR ASSEMBLY (AWZ5152)
J103
J104
U6
U7
E6
E7
E8
+39V
H. BLK
H. DRIVE
ABL
GND
+13.5V
+35V
A. GND
AC CLK
12VSTB
P. GND
P.D
RELAY
-9V
+9V
CPU RST
-25V
+25V
HV.PARA
P.KEY
V RET
V IN
E4
E5
J105
J104
J103
<H.T.>
<+220V>
<ANODE>
(RED)
(BLACK)
AC POWER CORD
A.C 120V 60Hz
NEUTRAL
LIVE
J101
J102
FU101 8A 125V
☆POWER SUPPLY ASSEMBLY (AWV1383)
(1/3) POWER SUPPLY BLOCK : ➡SCH-16
(2/3) DEFLECTION BLOCK : ➡SCH-17
(3/3) HIGH VOLTAGE BLOCK : ➡SCH-18
E1 (R)
E2 (G)
E3 (B)
<RH>
<RV>
<GH>
<GV>
<BH>
<BV>
U11
U15
U12 (RED)
U16 (BLACK)
SDATA
SCLK
CONV CE
DATA
MUTE CE
CLK
WIDE
SHADING
WIDEMUTE2
H.BLK
V.BLK
V.R
V.D
L
LG
R
RG
+36V
J23
J24
(L) (R)
W10
REGULATOR ASSEMBLY (AWZ5158) (➡SCH-6)
G1
G2
G3 (RED)
CONVERGENCE ASSEMBLY (AWZ5142) (➡SCH-15)
G4 (RED)
G5
G6 (BLACK)
<HR>
<VR>
<HD>
<VD>
R
G
B
VDY
HDY
HCY
VCY
ATL1086
D.Y
L1(R) L2(G) L3(B)
A
B
C
D
E
F
5
6
7
8
9

OVERALL WIRING DIAGRAM

SCH-2

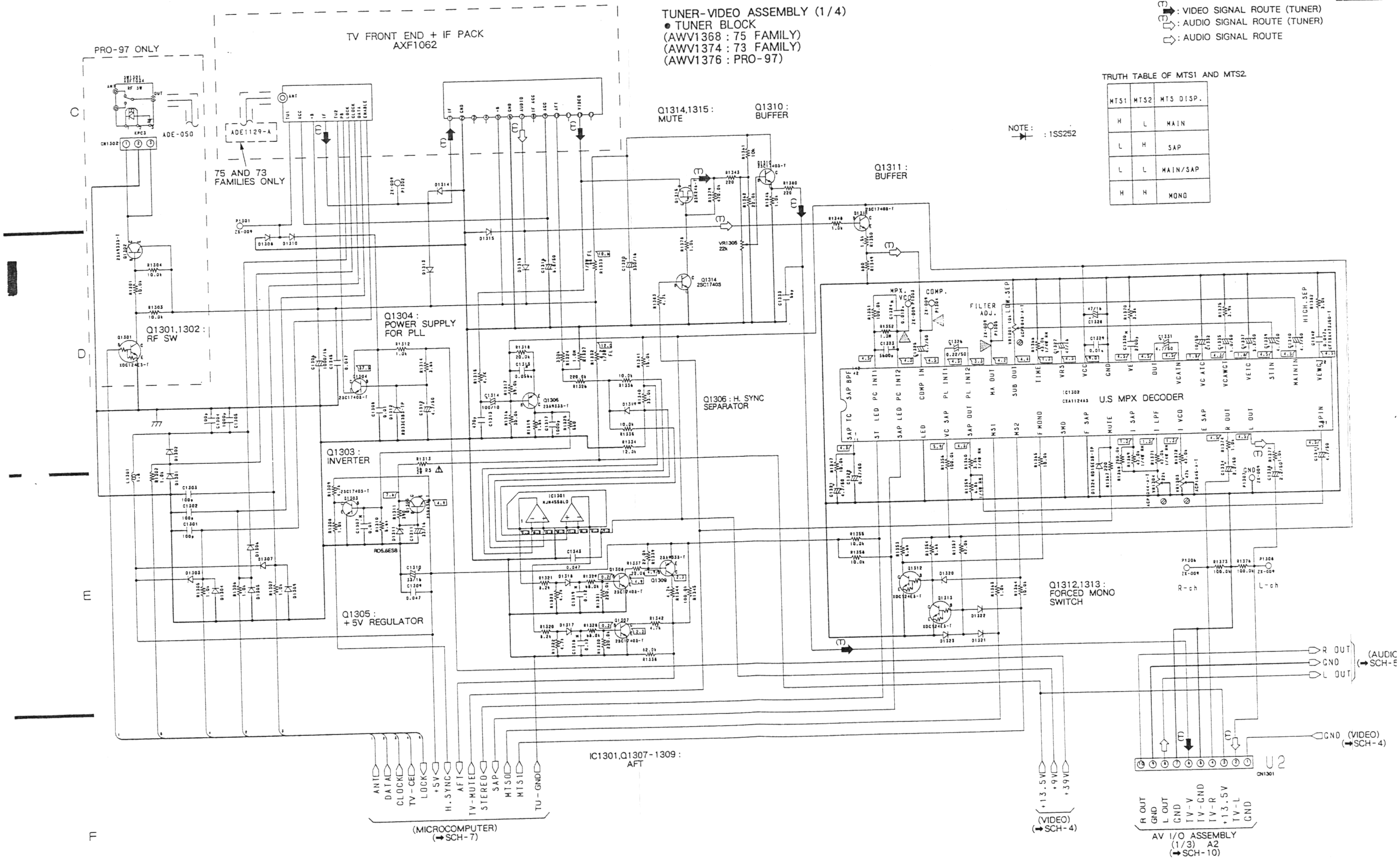
TUNER-VIDEO ASSEMBLY (1/4)

● TUNER BLOCK
(AWV1368 : 75 FAMILY)
(AWV1374 : 73 FAMILY)
(AWV1376 : PRO-97)

(T)➡ : VIDEO SIGNAL ROUTE (TUNER)
(T)⇨ : AUDIO SIGNAL ROUTE (TUNER)
⇨ : AUDIO SIGNAL ROUTE

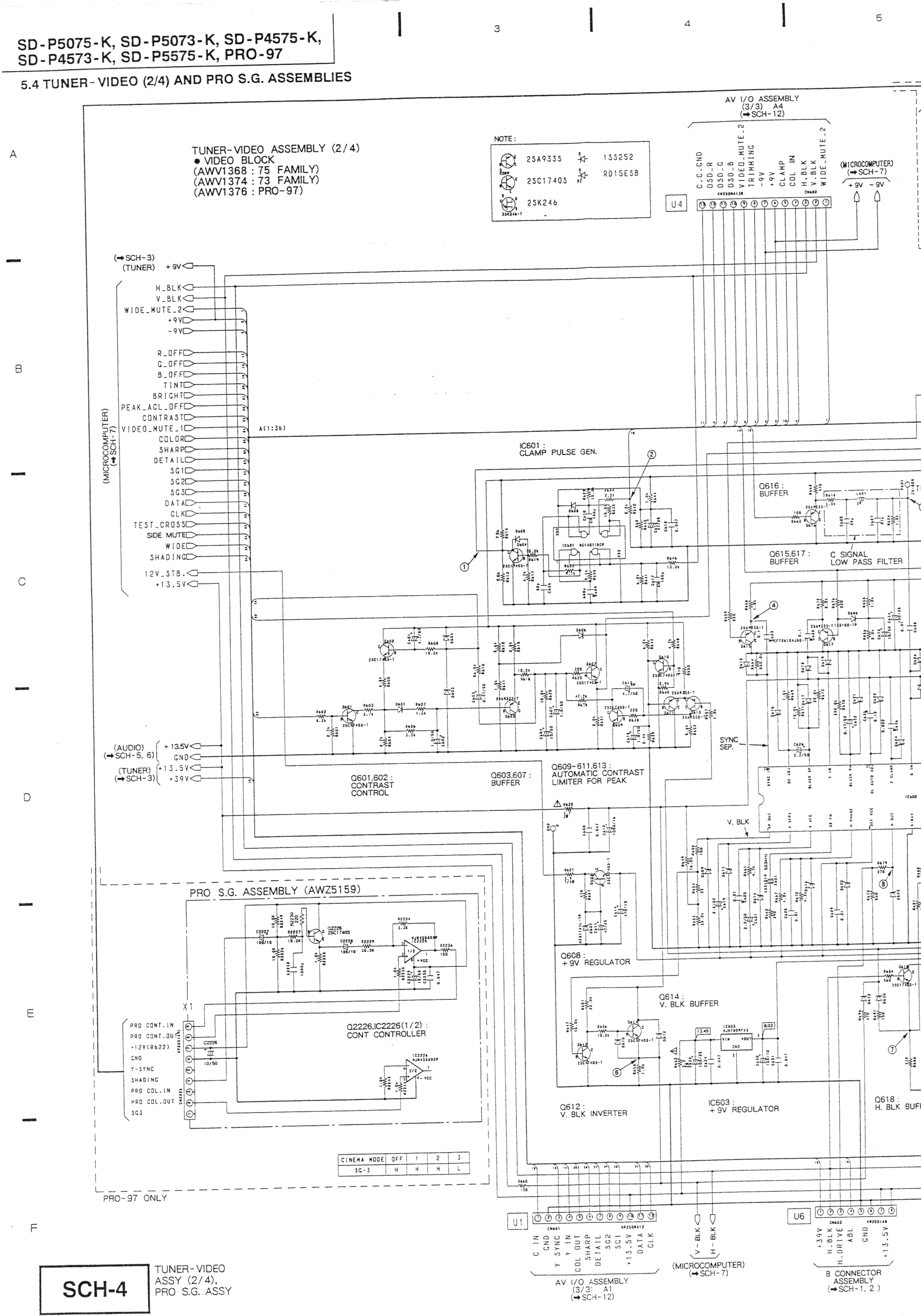
TRUTH TABLE OF MTS1 AND MTS2

MTS1	MTS2	MTS DISP.
H	L	MAIN
L	H	SAP
L	L	MAIN/SAP
H	H	MONO


PRO-97 ONLY
ADE-050
CN1302
TV FRONT END + IF PACK
AXF1062
ADE1129-A
75 AND 73
FAMILIES ONLY
ANT
Q1314,1315 :
MUTE
Q1310 :
BUFFER
Q1311 :
BUFFER
NOTE : 1SS252
Q1301,1302 :
RF SW
Q1304 :
POWER SUPPLY
FOR PLL
Q1303 :
INVERTER
Q1305 :
+5V REGULATOR
Q1306 : H. SYNC
SEPARATOR
IC1301
NJM4558L0
MPX. VCO
COMP.
FILTER ADJ.
LOW. SEP
HIGH. SEP
IC1302
CXA1124AS
U.S MPX DECODER
Q1312,1313 :
FORCED MONO
SWITCH
R-ch
L-ch
R OUT
GND
L OUT
(AUDIO
(➡SCH-5
GND (VIDEO)
(➡SCH-4)
IC1301,Q1307-1309 :
AFT
ANT
DATA
CLOCK
TV-CE
LOCK
+5V
H. SYNC
AFT
TV-MUTE
STEREO
SAP
MTS0
MTS1
TU-GND
(MICROCOMPUTER)
(➡SCH-7)
+13.5V
+9V
+39V
(VIDEO)
(➡SCH-4)
U2
CN1301
R OUT
GND
L OUT
GND
TV-V
TV-GND
TV-R
+13.5V
TV-L
GND
AV I/O ASSEMBLY
(1/3) A2
(➡SCH-10)
C
D
E
F
1
2
3
4
5
6

SCH-3 TUNER-VIDEO ASSY (1/4)

5.4 TUNER-VIDEO (2/4) AND PRO S.G. ASSEMBLIES


3
4
5
A
B
C
D
E
F
TUNER-VIDEO ASSEMBLY (2/4)
● VIDEO BLOCK
(AWV1368 : 75 FAMILY)
(AWV1374 : 73 FAMILY)
(AWV1376 : PRO-97)
NOTE:
2SA933S
2SC1740S
2SK246
1SS252
RD15ESB
AV I/O ASSEMBLY (3/3) A4 (➡SCH-12)
U4
C.C.GND
OSD_R
OSD_G
OSD_B
VIDEO_MUTE_2
TRIMMING
-9V
+9V
CLAMP
COL IN
H.BLK
V.BLK
WIDE_MUTE_2
(MICROCOMPUTER) (➡SCH-7)
+9V -9V
(➡SCH-3) (TUNER) +9V
H_BLK
V_BLK
WIDE_MUTE_2
+9V
-9V
R_OFF
G_OFF
B_OFF
TINT
BRIGHT
PEAK_ACL_OFF
CONTRAST
VIDEO_MUTE_1
COLOR
SHARP
DETAIL
SG1
SG2
SG3
DATA
CLK
TEST_CROSS
SIDE MUTE
WIDE
SHADING
12V_STB.
+13.5V
(MICROCOMPUTER) (➡SCH-7)
A(1:36)
IC601 : CLAMP PULSE GEN.
IC601 BC14011BCP
Q616 : BUFFER
Q615,617 : BUFFER
C SIGNAL LOW PASS FILTER
SYNC SEP.
(AUDIO) (➡SCH-5, 6) +13.5V GND
(TUNER) (➡SCH-3) +13.5V +39V
Q601,602 : CONTRAST CONTROL
Q603,607 : BUFFER
Q609-611,613 : AUTOMATIC CONTRAST LIMITER FOR PEAK
V. BLK
IC602
Q608 : +9V REGULATOR
Q614 : V. BLK BUFFER
IC603 NJM7809FA3
VIN VOUT GND
13.45
8.03
Q612 : V. BLK INVERTER
IC603 : +9V REGULATOR
Q618 : H. BLK BUFF
PRO S.G. ASSEMBLY (AWZ5159)
Q2226 2SC1740S
IC2226 NJM4560XP
Q2226,IC2226(1/2) : CONT CONTROLLER
X1
PRO CONT.IN
PRO CONT.OUT
+12V(R622)
GND
Y-SYNC
SHADING
PRO COL.IN
PRO COL.OUT
SG3
PRO-97 ONLY
U1
C IN
GND
Y SYNC
Y IN
COL OUT
SHARP
DETAIL
SG2
SG1
+13.5V
DATA
CLK
AV I/O ASSEMBLY (3/3) A1 (➡SCH-12)
V-BLK
H-BLK
(MICROCOMPUTER) (➡SCH-7)
U6
+39V
H.BLK
H.DRIVE
ABL
GND
+13.5V
B CONNECTOR ASSEMBLY (➡SCH-1, 2)
①
②
④
⑥
⑦
⑧
5

CINEMA MODE	OFF	1	2	3
SG-3	H	H	H	L

Note : DC voltage(V) at no input signal.

IC601 (MC14011BCP)

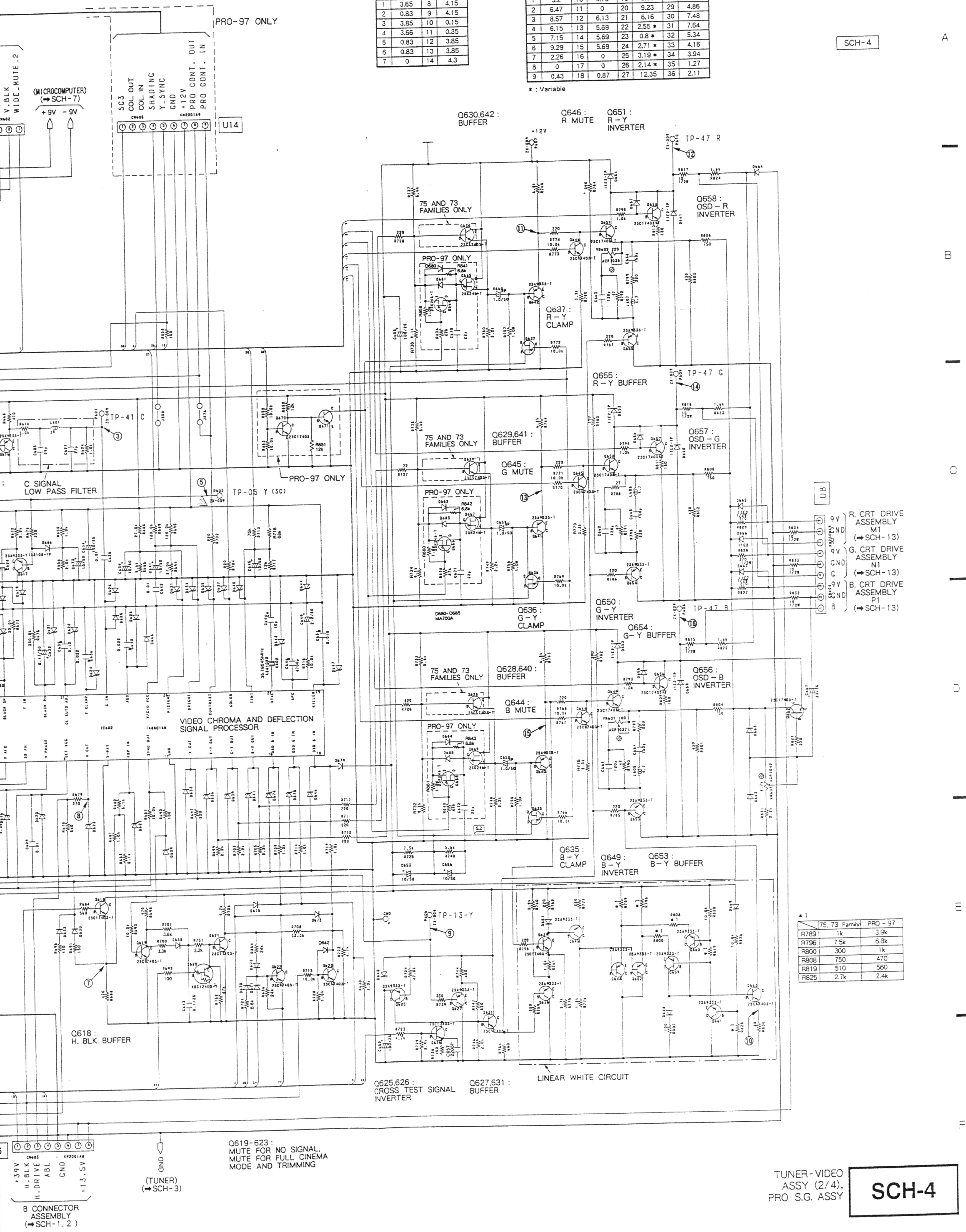
Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	3.65	8	4.15
2	0.83	9	4.15
3	3.85	10	0.15
4	3.66	11	0.35
5	0.83	12	3.85
6	0.83	13	3.85
7	0	14	4.3

Note : DC voltage(V) at no input signal.

IC602 (TA8801AN)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	5.2	10	4.76	19	8.35	28	11.61
2	6.47	11	0	20	9.23	29	4.86
3	8.57	12	6.13	21	6.16	30	7.48
4	6.15	13	5.69	22	2.55 *	31	7.64
5	7.15	14	5.69	23	0.8 *	32	5.34
6	9.29	15	5.69	24	2.71 *	33	4.16
7	2.26	16	0	25	3.19 *	34	3.94
8	0	17	0	26	2.14 *	35	1.27
9	0.43	18	0.87	27	12.35	36	2.11

* : Variable


SCH-4
A
B
C
D
E
F
PRO-97 ONLY
V.BLK
WIDE_MUTE_2
(MICROCOMPUTER)
(→SCH-7)
+9V -9V
SC3
COL OUT
COL IN
SHADING
Y_SYNC
GND
+12V
PRO CONT. OUT
PRO CONT. IN
CN605
KN2001A9
U14
Q630,642 :
BUFFER
Q646 :
R MUTE
Q651 :
R-Y
INVERTER
+12V
TP-47 R
⑫
⑪
75 AND 73
FAMILIES ONLY
PRO-97 ONLY
Q658 :
OSD-R
INVERTER
Q637 :
R-Y
CLAMP
Q655 :
R-Y BUFFER
TP-47 G
⑭
TP-41 C
③
PRO-97 ONLY
C SIGNAL
LOW PASS FILTER
⑤
TP-05 Y (SC)
75 AND 73
FAMILIES ONLY
Q629,641 :
BUFFER
Q645 :
G MUTE
⑬
Q657 :
OSD-G
INVERTER
PRO-97 ONLY
U8
9V
GND
R
R. CRT DRIVE
ASSEMBLY
M1
(→SCH-13)
9V
GND
G
G. CRT DRIVE
ASSEMBLY
N1
(→SCH-13)
9V
GND
B
B. CRT DRIVE
ASSEMBLY
P1
(→SCH-13)
Q680-Q685
MA700A
Q636 :
G-Y
CLAMP
Q650 :
G-Y
INVERTER
TP-47 B
⑯
Q654 :
G-Y BUFFER
75 AND 73
FAMILIES ONLY
Q628,640 :
BUFFER
Q644 :
B MUTE
⑮
Q656 :
OSD-B
INVERTER
PRO-97 ONLY
IC602
TA8801AN
VIDEO CHROMA AND DEFLECTION
SIGNAL PROCESSOR
⑧
Q635 :
B-Y
CLAMP
Q649 :
B-Y
INVERTER
Q653 :
B-Y BUFFER
TP-13-Y
⑨
⑦
⑩
Q618 :
H. BLK BUFFER
Q625,626 :
CROSS TEST SIGNAL
INVERTER
Q627,631 :
BUFFER
LINEAR WHITE CIRCUIT
Q619-623 :
MUTE FOR NO SIGNAL,
MUTE FOR FULL CINEMA
MODE AND TRIMMING
+39V
H.BLK
H.DRIVE
ABL
GND
+13.5V
CN603
KN2001A8
B CONNECTOR
ASSEMBLY
(→SCH-1, 2)
GND
(TUNER)
(→SCH-3)

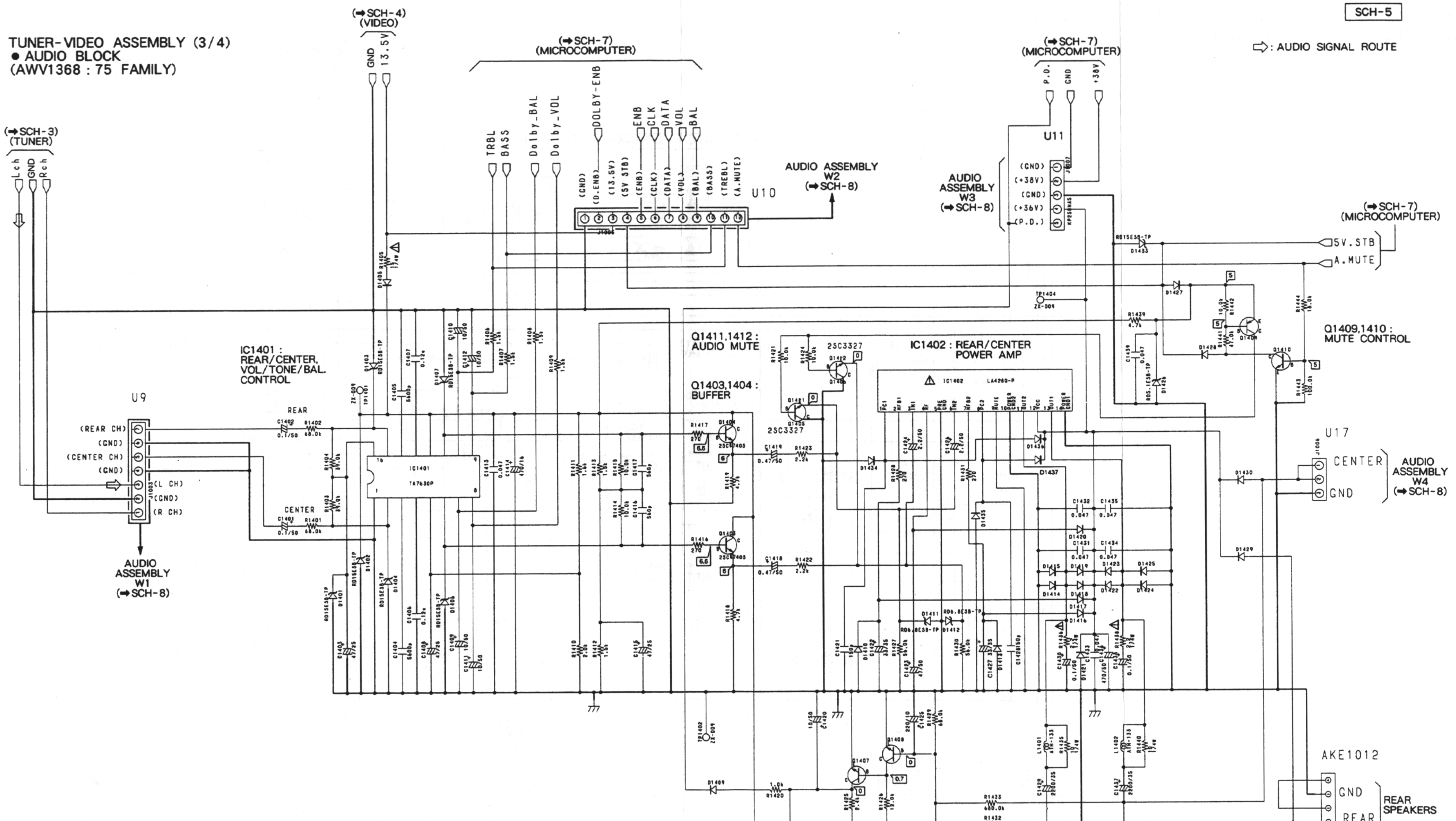
* 1

	75. 73 Family	PRO - 97
R789	1k	3.9k
R796	7.5k	6.8k
R800	300	1k
R808	750	470
R819	510	560
R825	2.7k	2.4k

TUNER-VIDEO
ASSY (2/4),
PRO S.G. ASSY

SCH-4

5.5 TUNER-VIDEO ASSEMBLY (3/4) (75 FAMILY)


TUNER-VIDEO ASSEMBLY (3/4)
● AUDIO BLOCK
(AWV1368 : 75 FAMILY)
(➡SCH-4)
(VIDEO)
GND
13.5V
(➡SCH-7)
(MICROCOMPUTER)
TRBL
BASS
Dolby_BAL
Dolby_VOL
DOLBY-ENB
ENB
CLK
DATA
VOL
BAL
(GND)
(D.ENB)
(13.5V)
(5V STB)
(ENB)
(CLK)
(DATA)
(VOL)
(BAL)
(BASS)
(TREBL)
(A.MUTE)
U10
AUDIO ASSEMBLY
W2
(➡SCH-8)
(➡SCH-7)
(MICROCOMPUTER)
P.D.
GND
+36V
U11
AUDIO ASSEMBLY
W3
(➡SCH-8)
(GND)
(+38V)
(GND)
(+36V)
(P.D.)
⇨: AUDIO SIGNAL ROUTE
(➡SCH-7)
(MICROCOMPUTER)
5V.STB
A.MUTE
(➡SCH-3)
(TUNER)
Lch
GND
Rch
IC1401 :
REAR/CENTER,
VOL/TONE/BAL.
CONTROL
U9
(REAR CH)
(GND)
(CENTER CH)
(GND)
(L CH)
(GND)
(R CH)
REAR
CENTER
IC1401
TA7630P
AUDIO
ASSEMBLY
W1
(➡SCH-8)
Q1411,1412 :
AUDIO MUTE
2SC3327
Q1403,1404 :
BUFFER
2SC3327
IC1402 : REAR/CENTER
POWER AMP
IC1402
LA4280-P
Q1409,1410 :
MUTE CONTROL
U17
CENTER
GND
AUDIO
ASSEMBLY
W4
(➡SCH-8)
AKE1012
GND
REAR
REAR
SPEAKERS
SP1401
Q1407,1408 :
DC PROTECTOR

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	9	3.1
2	6.3	10	3.1
3	6.3	11	6.6
4	6.3	12	13
5	6.3	13	6.3
6	6.6	14	6.3
7	3.1	15	6.3
8	0	16	6.3

IC1401 (TA7630P)

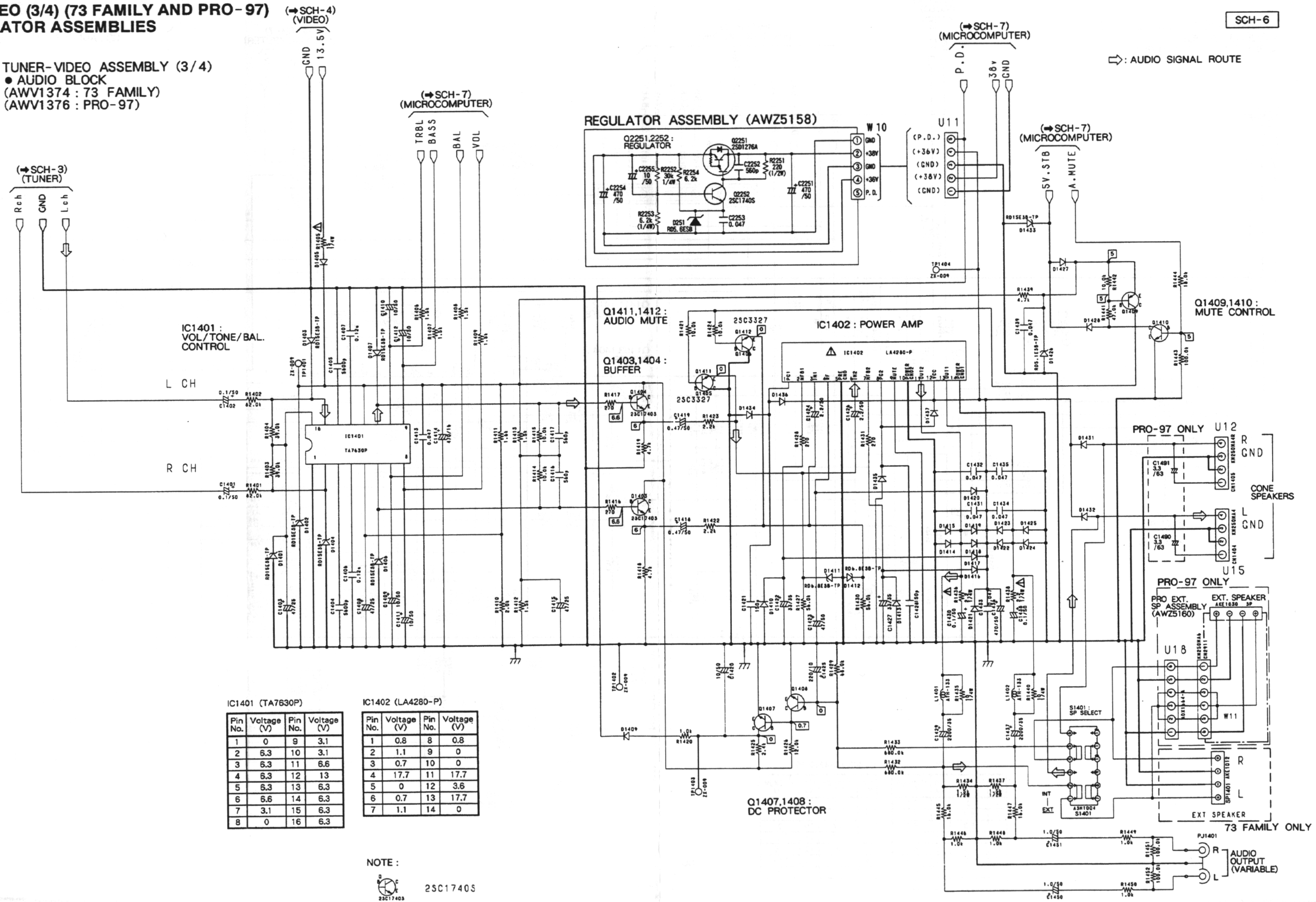
Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0.8	8	0.8
2	1.1	9	0
3	0.7	10	0
4	17.7	11	17.7
5	0	12	3.6
6	0.7	13	17.7
7	1.1	14	0

IC1402 (LA4280-P)

NOTE :

Q1402
2SC1740S
Q1401
2SA933S
D1406
1SS252

5.6 TUNER-VIDEO (3/4) (73 FAMILY AND PRO-97) AND REGULATOR ASSEMBLIES


(➡SCH-4)
(VIDEO)
GND
13.5V
TUNER-VIDEO ASSEMBLY (3/4)
● AUDIO BLOCK
(AWV1374 : 73 FAMILY)
(AWV1376 : PRO-97)
(➡SCH-7)
(MICROCOMPUTER)
TRBL
BASS
BAL
VOL
(➡SCH-3)
(TUNER)
Rch
GND
Lch
REGULATOR ASSEMBLY (AWZ5158)
Q2251,2252 :
REGULATOR
Q2251
2SD1276A
Q2252
2SC1740S
W10
GND
+38V
GND
+36V
P.D.
U11
(P.D.)
(+36V)
(GND)
(+38V)
(GND)
(➡SCH-7)
(MICROCOMPUTER)
P.D.
38v
GND
5V.STB
A.MUTE
⇨: AUDIO SIGNAL ROUTE
IC1401 :
VOL/TONE/BAL.
CONTROL
IC1401
TA7630P
L CH
R CH
Q1411,1412 :
AUDIO MUTE
Q1403,1404 :
BUFFER
2SC3327
IC1402 : POWER AMP
IC1402
LA4280-P
Q1409,1410 :
MUTE CONTROL
PRO-97 ONLY
U12
R
GND
L
GND
CONE
SPEAKERS
U15
PRO-97 ONLY
PRO EXT.
SP ASSEMBLY
(AWZ5160)
EXT. SPEAKER
U18
W11
S1401 :
SP SELECT
INT
EXT
R
L
EXT SPEAKER
73 FAMILY ONLY
PJ1401
R
L
AUDIO
OUTPUT
(VARIABLE)
Q1407,1408 :
DC PROTECTOR

IC1401 (TA7630P)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	9	3.1
2	6.3	10	3.1
3	6.3	11	6.6
4	6.3	12	13
5	6.3	13	6.3
6	6.6	14	6.3
7	3.1	15	6.3
8	0	16	6.3

IC1402 (LA4280-P)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0.8	8	0.8
2	1.1	9	0
3	0.7	10	0
4	17.7	11	17.7
5	0	12	3.6
6	0.7	13	17.7
7	1.1	14	0

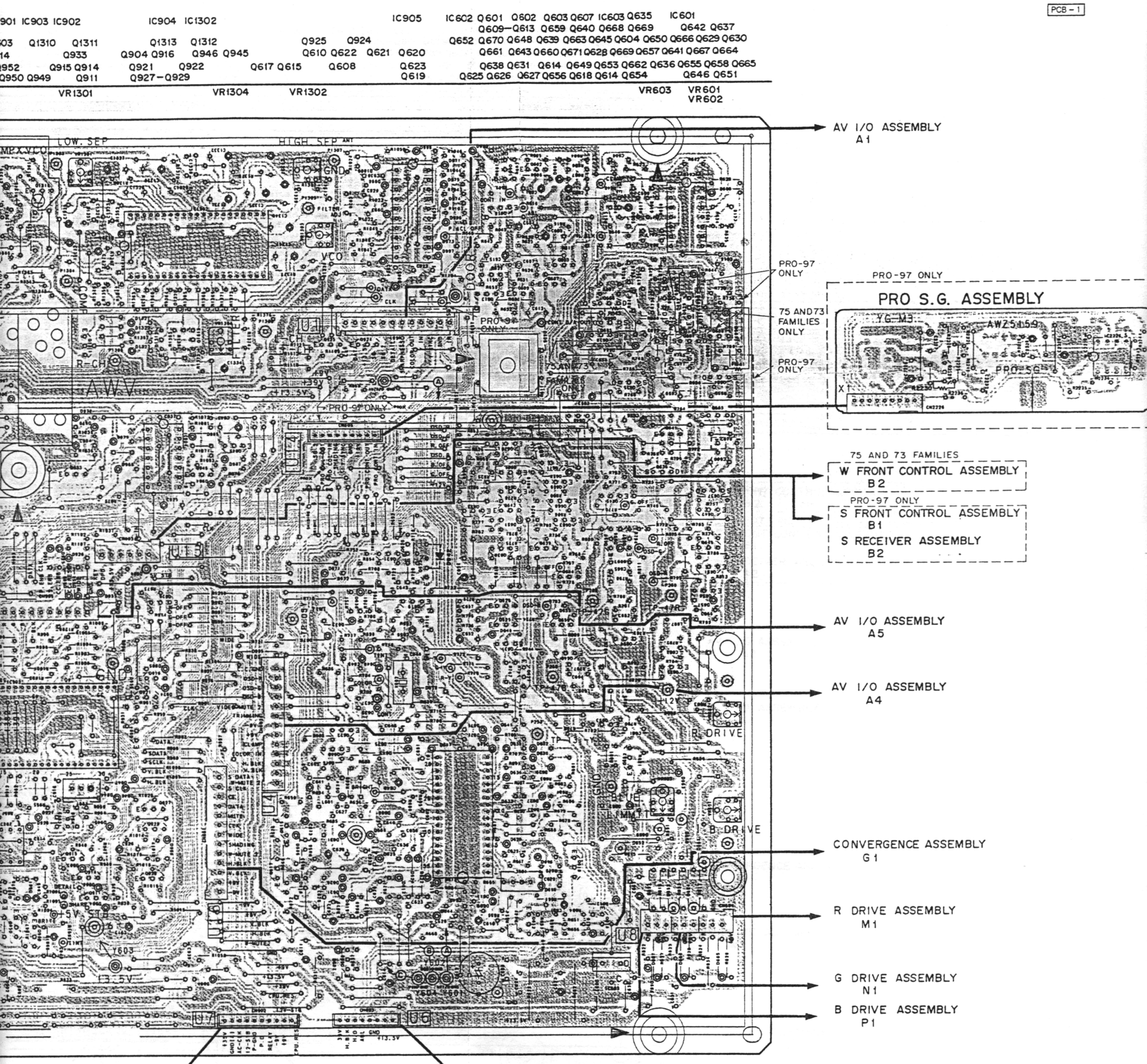
NOTE :

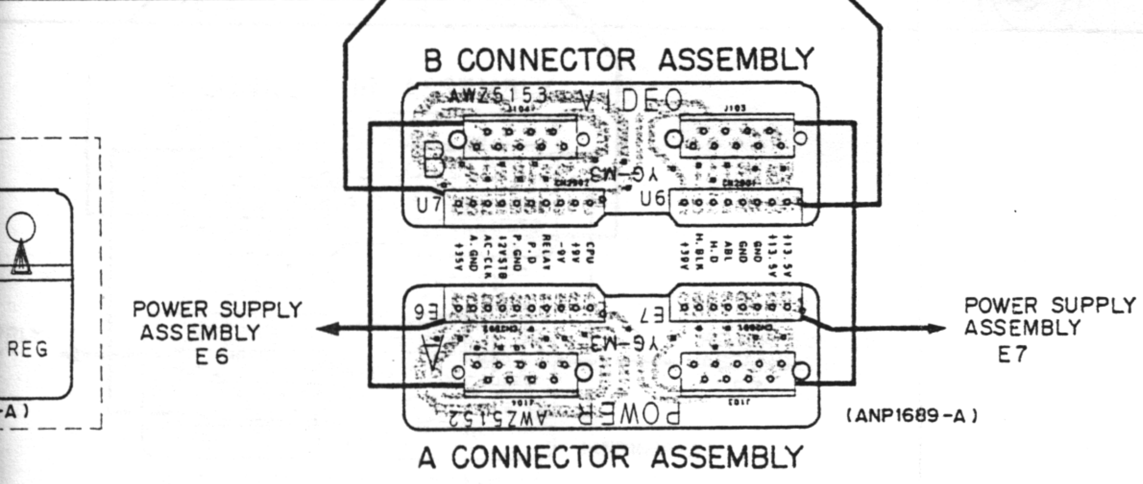
2SC1740S

2SA933S

1SS252

PCB-1

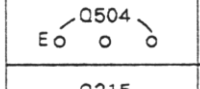
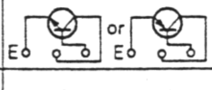
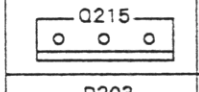
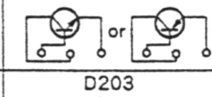
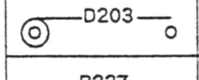
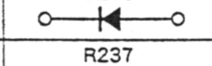
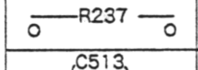
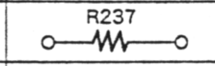
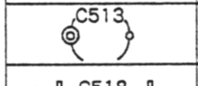
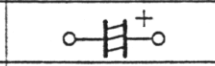
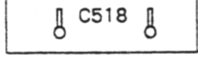
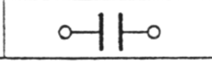

901 IC903 IC902
IC904 IC1302
IC905
IC602 Q601 Q602 Q603 Q607 IC603 Q635
IC601
Q609—Q613 Q659 Q640 Q668 Q669
Q642 Q637
03 Q1310 Q1311
Q1313 Q1312
Q925 Q924
Q652 Q670 Q648 Q639 Q663 Q645 Q604 Q650 Q666 Q629 Q630
14 Q933
Q904 Q916 Q946 Q945
Q610 Q622 Q621 Q620
Q661 Q643 Q660 Q671 Q628 Q669 Q657 Q641 Q667 Q664
952 Q915 Q914
Q921 Q922
Q617 Q615
Q608
Q623
Q638 Q631 Q614 Q649 Q653 Q662 Q636 Q655 Q658 Q665
Q950 Q949 Q911
Q927—Q929
Q619
Q625 Q626 Q627 Q656 Q618 Q614 Q654
Q646 Q651
VR1301
VR1304
VR1302
VR603
VR601
VR602
LOW. SEP
HIGH. SEP
MPX.VCO
GND
VCO
R-CH
AWV
PRO-97 ONLY
75 AND 73 FAMILIES ONLY
+13.5V
+39V
GND
R-DRIVE
B-DRIVE
Y603
+5V
+13.5V
U1
U4
U6
U7
U8
AV I/O ASSEMBLY
A1
PRO-97 ONLY
75 AND73 FAMILIES ONLY
PRO-97 ONLY
PRO-97 ONLY
PRO S.G. ASSEMBLY
YG-M3
AWZ5159
PRO-SG
75 AND 73 FAMILIES
W FRONT CONTROL ASSEMBLY
B2
PRO-97 ONLY
S FRONT CONTROL ASSEMBLY
B1
S RECEIVER ASSEMBLY
B2
AV I/O ASSEMBLY
A5
AV I/O ASSEMBLY
A4
CONVERGENCE ASSEMBLY
G1
R DRIVE ASSEMBLY
M1
G DRIVE ASSEMBLY
N1
B DRIVE ASSEMBLY
P1


B CONNECTOR ASSEMBLY
AWZ5153 VIDEO
YG-M3
U7
U6
E6
E7
POWER SUPPLY ASSEMBLY
E6
POWER SUPPLY ASSEMBLY
E7
REG
AWZ5152 POWER
(ANP1689-A)
A CONNECTOR ASSEMBLY

NOTE FOR PCB CONNECTION DIAGRAMS

NOTE

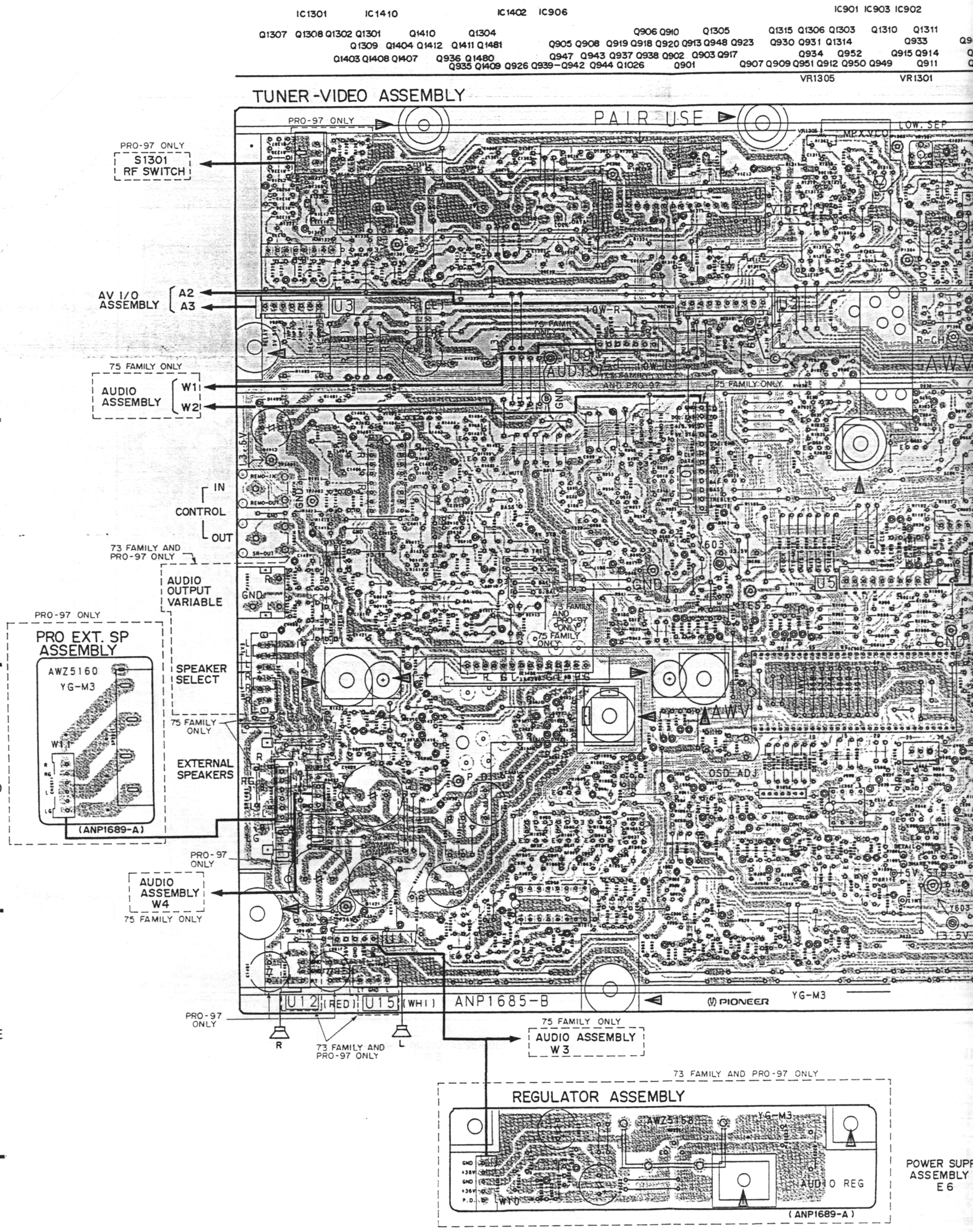
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B.pattern diagram indication	Corresponding part symbol	Part Name
 Q504	 or	Transistor
 Q215	 or	Radiator type transistor
 D203	 D203	Diode
 R237	 R237	Resistor
 C513		Capacitor (Polarity)
 C518		Capacitor (Non-polarity)

Others

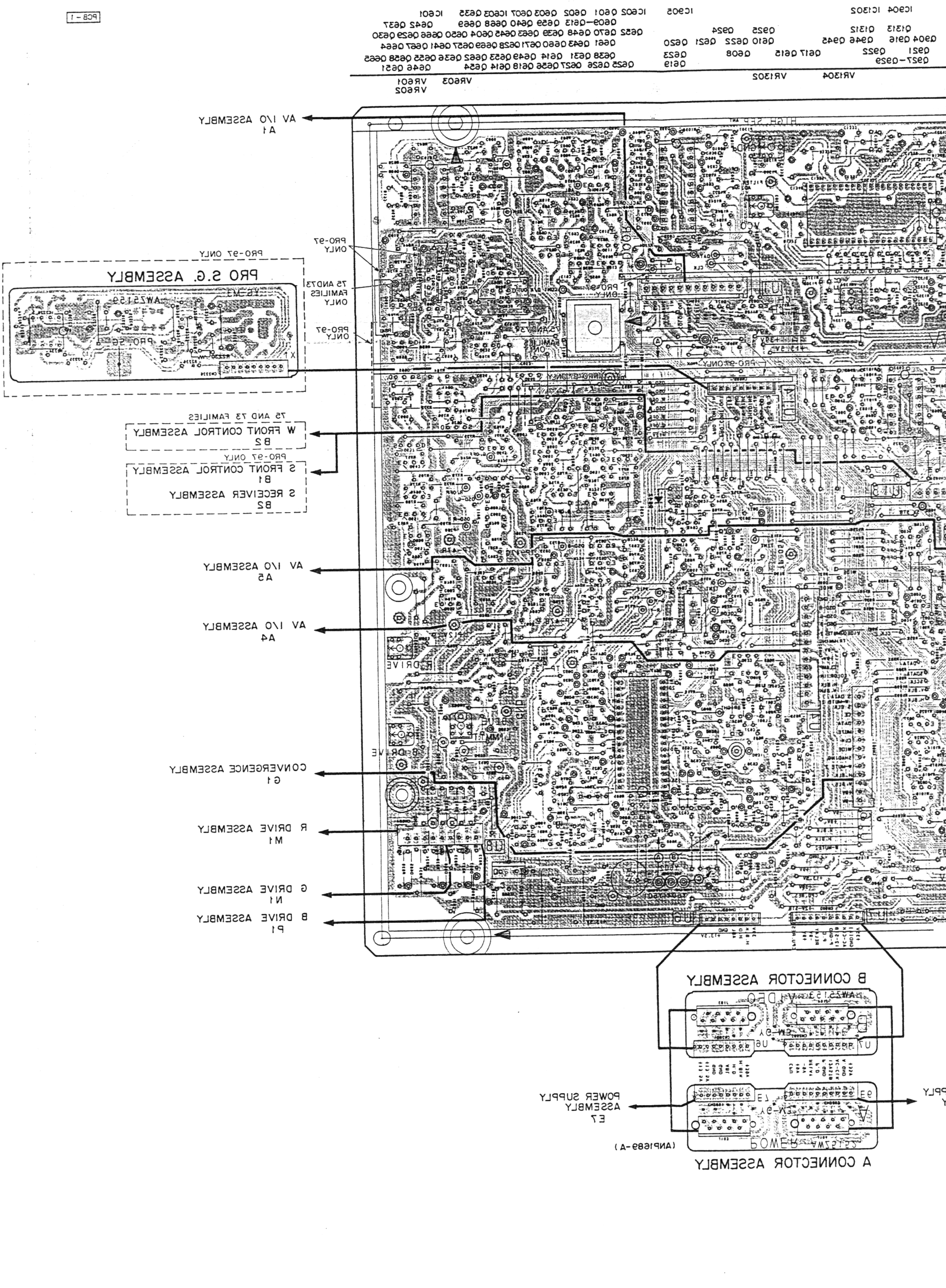
P.C.B pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

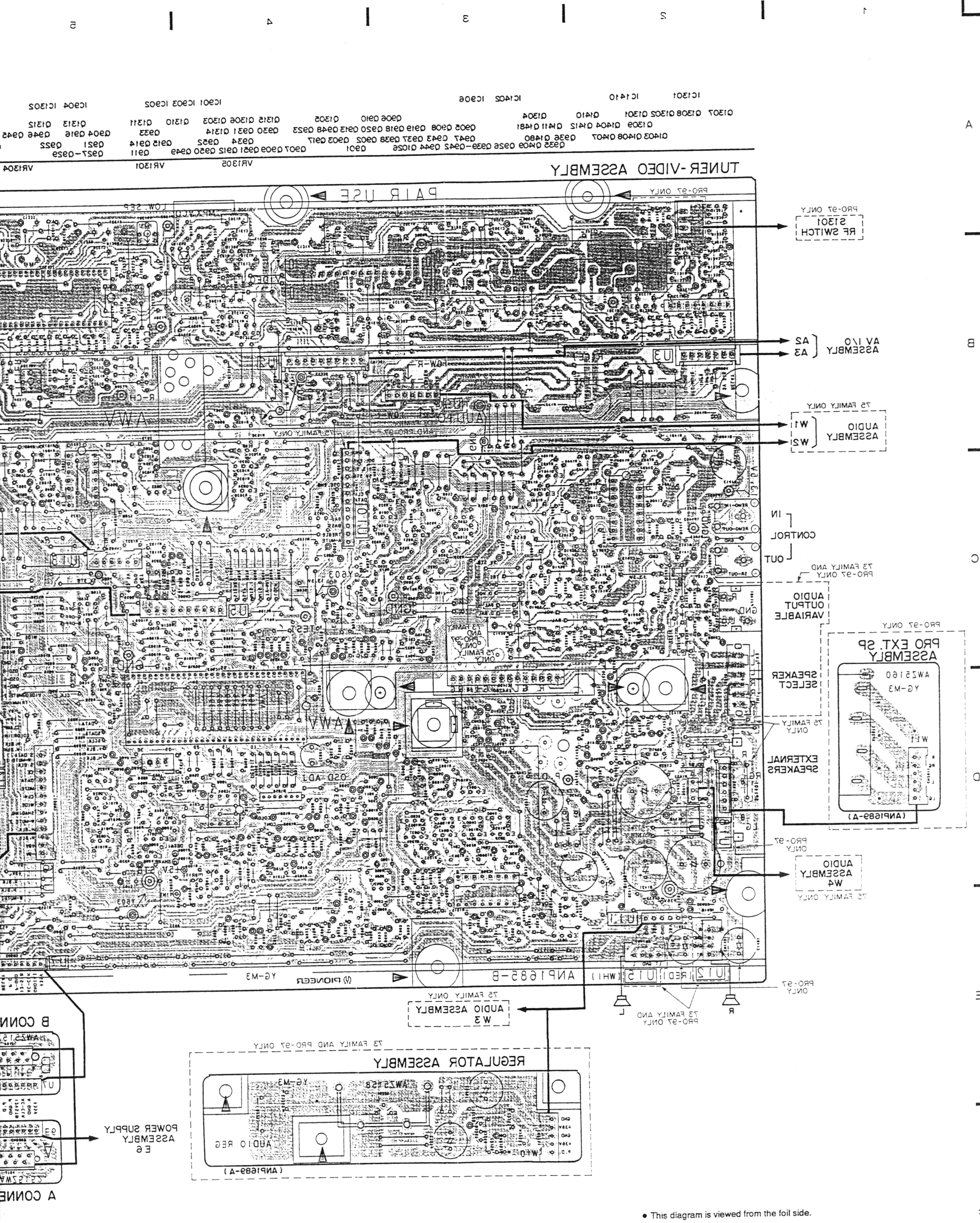
3. The capacitor terminal marked with ◎ (double circles) shows neg
4. The diode terminal marked with ◎ (double circles) shows cathode
5. The transistor terminal to which E is affixed shows the emitter.


IC1301 IC1410 IC1402 IC906 IC901 IC903 IC902
Q1307 Q1308 Q1302 Q1301 Q1410 Q1304 Q906 Q910 Q1305 Q1315 Q1306 Q1303 Q1310 Q1311
Q1309 Q1404 Q1412 Q1411 Q1481 Q905 Q908 Q919 Q918 Q920 Q913 Q948 Q923 Q930 Q931 Q1314 Q933
Q1403 Q1408 Q1407 Q936 Q1480 Q947 Q943 Q937 Q938 Q902 Q903 Q917 Q934 Q952 Q915 Q914
Q935 Q1409 Q926 Q939–Q942 Q944 Q1026 Q901 Q907 Q909 Q951 Q912 Q950 Q949 Q911
VR1305 VR1301
TUNER-VIDEO ASSEMBLY
PRO-97 ONLY
PAIR USE
LOW SEP
PRO-97 ONLY
S1301
RF SWITCH
AV I/O ASSEMBLY
A2
A3
U3
U2
U9
AUDIO
75 FAMILY ONLY
AUDIO ASSEMBLY
W1
W2
U10
IN
CONTROL
OUT
73 FAMILY AND PRO-97 ONLY
AUDIO OUTPUT VARIABLE
Y603
GND
U5
73 FAMILY AND PRO-97 ONLY
75 FAMILY ONLY
PRO-97 ONLY
PRO EXT. SP ASSEMBLY
AWZ5160
YG-M3
W11
(ANP1689-A)
SPEAKER SELECT
AWV
75 FAMILY ONLY
EXTERNAL SPEAKERS
OSD ADJ
PRO-97 ONLY
AUDIO ASSEMBLY
W4
75 FAMILY ONLY
+5V
13.5V
U12 (RED) U15 (WHI) ANP1685-B
PIONEER
YG-M3
PRO-97 ONLY
R
73 FAMILY AND PRO-97 ONLY
L
75 FAMILY ONLY
AUDIO ASSEMBLY
W3
73 FAMILY AND PRO-97 ONLY
REGULATOR ASSEMBLY
AWZ5168
YG-M3
GND
+38V
GND
+36V
P.D.
W10
AUDIO REG
(ANP1689-A)
POWER SUPP
ASSEMBLY
E6

• This diagram is viewed from the mounted parts side.

PCB-1

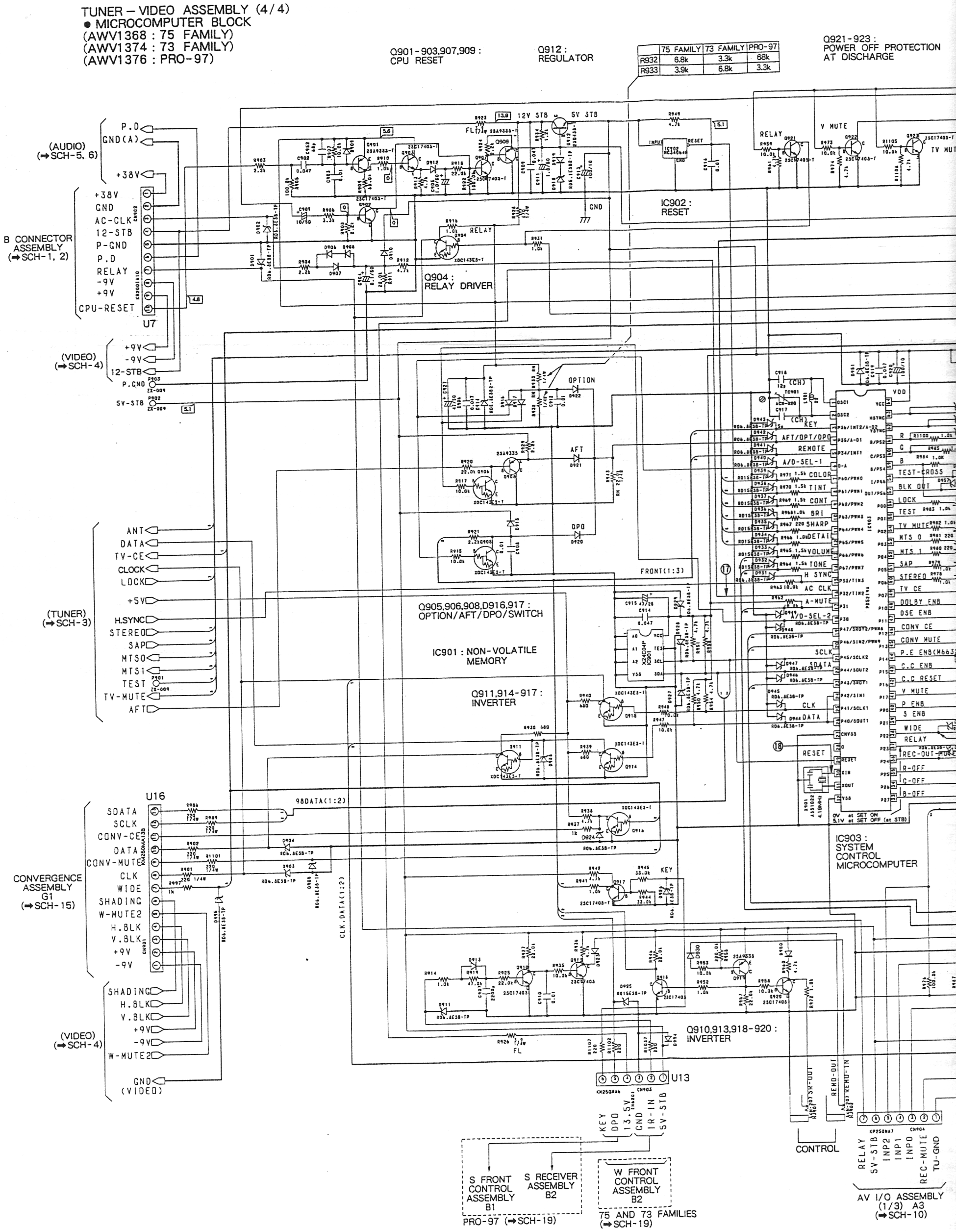

VR601
VR602
VR603
VR1302
VR1304
AV I/O ASSEMBLY
A1
PRO-97 ONLY
PRO S.G. ASSEMBLY
PRO-97 ONLY
75 AND 73 FAMILIES ONLY
PRO-97 ONLY
75 AND 73 FAMILIES
W FRONT CONTROL ASSEMBLY
B2
PRO-97 ONLY
S FRONT CONTROL ASSEMBLY
B1
S RECEIVER ASSEMBLY
B2
AV I/O ASSEMBLY
A5
AV I/O ASSEMBLY
A4
CONVERGENCE ASSEMBLY
G1
R DRIVE ASSEMBLY
M1
G DRIVE ASSEMBLY
N1
B DRIVE ASSEMBLY
P1
B CONNECTOR ASSEMBLY
POWER SUPPLY ASSEMBLY
E7
(ANP1689-A)
A CONNECTOR ASSEMBLY
9
8
7
6
5


5
4
3
2
1
A
B
C
D
E
TUNER-VIDEO ASSEMBLY
PAIR USE
PRO-97 ONLY
S1301
RF SWITCH
AV I/O ASSEMBLY
A2
A3
75 FAMILY ONLY
AUDIO ASSEMBLY
W1
W2
IN
CONTROL
OUT
73 FAMILY AND PRO-97 ONLY
AUDIO OUTPUT VARIABLE
PRO-97 ONLY
PRO EXT. SP ASSEMBLY
AWZ5160
YG-M3
(ANP1689-A)
SPEAKER SELECT
75 FAMILY ONLY
EXTERNAL SPEAKERS
PRO-97 ONLY
AUDIO ASSEMBLY
W4
75 FAMILY ONLY
ANP1685-B
PIONEER
YG-M3
PRO-97 ONLY
75 FAMILY ONLY
AUDIO ASSEMBLY
W3
L
R
73 FAMILY AND PRO-97 ONLY
73 FAMILY AND PRO-97 ONLY
REGULATOR ASSEMBLY
AWZ5158
YG-M3
AUDIO REG
(ANP1689-A)
POWER SUPPLY ASSEMBLY
E6
B CONN
A CONNE

- This diagram is viewed from the foil side.

5 4 3 2 1

5.7 TUNER-VIDEO ASSEMBLY (4/4)


TUNER – VIDEO ASSEMBLY (4/4)
• MICROCOMPUTER BLOCK
(AWV1368 : 75 FAMILY)
(AWV1374 : 73 FAMILY)
(AWV1376 : PRO-97)
Q901-903,907,909 : CPU RESET
Q912 : REGULATOR
Q921-923 : POWER OFF PROTECTION AT DISCHARGE
IC902 : RESET
Q904 : RELAY DRIVER
Q905,906,908,D916,917 : OPTION/AFT/DPO/SWITCH
IC901 : NON-VOLATILE MEMORY
Q911,914-917 : INVERTER
Q910,913,918-920 : INVERTER
IC903 : SYSTEM CONTROL MICROCOMPUTER
(AUDIO) (➡SCH-5, 6)
P.D
GND(A)
+38V
B CONNECTOR ASSEMBLY (➡SCH-1, 2)
+38V
GND
AC-CLK
12-STB
P-GND
P.D
RELAY
-9V
+9V
CPU-RESET
U7
(VIDEO) (➡SCH-4)
+9V
-9V
12-STB
P.GND
5V-STB
(TUNER) (➡SCH-3)
ANT
DATA
TV-CE
CLOCK
LOCK
+5V
H.SYNC
STEREO
SAP
MTS0
MTS1
TEST
TV-MUTE
AFT
CONVERGENCE ASSEMBLY G1 (➡SCH-15)
U16
SDATA
SCLK
CONV-CE
DATA
CONV-MUTE
CLK
WIDE
SHADING
W-MUTE2
H.BLK
V.BLK
+9V
-9V
(VIDEO) (➡SCH-4)
SHADING
H.BLK
V.BLK
+9V
-9V
W-MUTE2
GND (VIDEO)
12V STB
5V STB
RELAY
V MUTE
TV MUTE
GND
OPTION
AFT
DPO
FRONT(1:3)
98DATA(1:2)
CLK.DATA(1:2)
KEY
FL
U13
KEY
DPO
13.5V
GND
IR-IN
5V-STB
S FRONT CONTROL ASSEMBLY B1
S RECEIVER ASSEMBLY B2
PRO-97 (➡SCH-19)
W FRONT CONTROL ASSEMBLY B2
75 AND 73 FAMILIES (➡SCH-19)
CONTROL
REMO-OUT
RELAY
5V-STB
INP2
INP1
INP0
REC-MUTE
TU-GND
AV I/O ASSEMBLY (1/3) A3 (➡SCH-10)
(CH)
KEY
AFT/OPT/DPO
REMOTE
A/D-SEL-1
COLOR
TINT
CONT
BRI
SHARP
DETAIL
VOLUME
TONE
H SYNC
AC CLK
A-MUTE
A/D-SEL-2
SCLK
SDATA
CLK
DATA
RESET
VDD
R
G
B
TEST-CROSS
BLK OUT
LOCK
TEST
TV MUTE
MTS 0
MTS 1
SAP
STEREO
TV CE
DOLBY ENB
DSE ENB
CONV CE
CONV MUTE
P.E ENB(M663
C.C ENB
C.C RESET
V MUTE
P ENB
S ENB
WIDE
RELAY
REC-OUT-MUTE
R-OFF
G-OFF
B-OFF
⑰
⑱

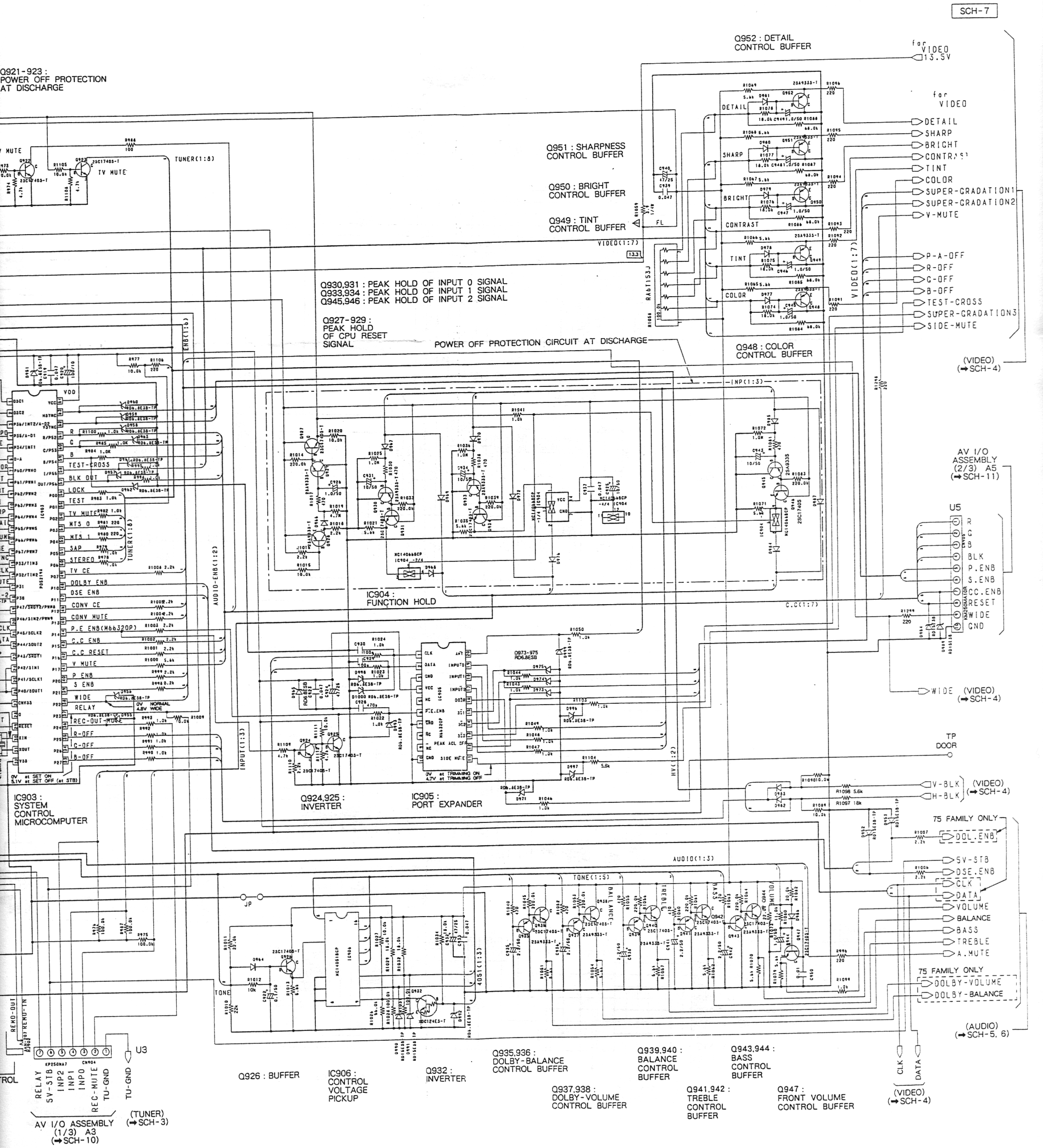
	75 FAMILY	73 FAMILY	PRO-97
R932	6.8k	3.3k	68k
R933	3.9k	6.8k	3.3k

IC905 (M66320P)

Function Control Logic

19 pin (input 0)	18 pin (input 1)	17 pin (input 2)	FUNCTION
H	H	L	VIDEO 3
L	H	L	VIDEO 2
H	L	L	VIDEO 1
L	L	L	LD
L	L	H	TV

L : 0V, H : 5.1V


Q952 : DETAIL CONTROL BUFFER
for VIDEO 13.5V
for VIDEO
DETAIL
SHARP
BRIGHT
CONTRAST
TINT
COLOR
SUPER-GRADATION1
SUPER-GRADATION2
V-MUTE
P-A-OFF
R-OFF
G-OFF
B-OFF
TEST-CROSS
SUPER-GRADATION3
SIDE-MUTE
(VIDEO) (➡SCH-4)
Q921-923 : POWER OFF PROTECTION AT DISCHARGE
TV MUTE
TUNER(1:8)
Q951 : SHARPNESS CONTROL BUFFER
Q950 : BRIGHT CONTROL BUFFER
Q949 : TINT CONTROL BUFFER
VIDEO(1:7)
Q930,931 : PEAK HOLD OF INPUT 0 SIGNAL
Q933,934 : PEAK HOLD OF INPUT 1 SIGNAL
Q945,946 : PEAK HOLD OF INPUT 2 SIGNAL
Q927-929 : PEAK HOLD OF CPU RESET SIGNAL
POWER OFF PROTECTION CIRCUIT AT DISCHARGE
Q948 : COLOR CONTROL BUFFER
INP(1:3)
AV I/O ASSEMBLY (2/3) A5 (➡SCH-11)
U5
R
G
B
BLK
P.ENB
S.ENB
CC.ENB
RESET
WIDE
GND
C.C(1:7)
WIDE (VIDEO) (➡SCH-4)
IC904 : FUNCTION HOLD
VDD
R
G
B
TEST-CROSS
BLK OUT
LOCK
TEST
TV MUTE
MTS 0
MTS 1
SAP
STEREO
TV CE
DOLBY ENB
DSE ENB
CONV CE
CONV MUTE
P.E ENB(M66320P)
C.C ENB
C.C RESET
V MUTE
P ENB
S ENB
WIDE
RELAY
REC-OUT-MUTE
R-OFF
G-OFF
B-OFF
0V NORMAL 4.8V WIDE
0V at SET ON 5.1V at SET OFF (at STB)
AUDIO-ENB(1:2)
ENB(1:6)
INPUT(1:3)
HV(1:2)
IC903 : SYSTEM CONTROL MICROCOMPUTER
Q924,925 : INVERTER
IC905 : PORT EXPANDER
0V at TRIMMING ON 4.7V at TRIMMING OFF
TP DOOR
V-BLK
H-BLK
(VIDEO) (➡SCH-4)
75 FAMILY ONLY
DOL.ENB
AUDIO(1:3)
TONE(1:5)
5V-STB
DSE.ENB
CLK
DATA
VOLUME
BALANCE
BASS
TREBLE
A.MUTE
75 FAMILY ONLY
DOLBY-VOLUME
DOLBY-BALANCE
(AUDIO) (➡SCH-5, 6)
JP
TONE
U3
RELAY
5V-STB
INP2
INP1
INP0
REC-MUTE
TU-GND
TU-GND
REMO-OUT
REMO-IN
AV I/O ASSEMBLY (1/3) A3 (➡SCH-10)
(TUNER) (➡SCH-3)
Q926 : BUFFER
IC906 : CONTROL VOLTAGE PICKUP
Q932 : INVERTER
Q935,936 : DOLBY-BALANCE CONTROL BUFFER
Q937,938 : DOLBY-VOLUME CONTROL BUFFER
Q939,940 : BALANCE CONTROL BUFFER
Q941,942 : TREBLE CONTROL BUFFER
Q943,944 : BASS CONTROL BUFFER
Q947 : FRONT VOLUME CONTROL BUFFER
CLK
DATA
(VIDEO) (➡SCH-4)

M66320P)

n Control Logic

n 0)	18 pin (input 1)	17 pin (input 2)	FUNCTION
	H	L	VIDEO 3
	H	L	VIDEO 2
	L	L	VIDEO 1
	L	L	LD
	L	H	TV

H : 5.1V

IC905 (M66320P)

Cinema Mode

15 pin (SG1)	14 pin (SG2)	13 pin (SG3)	
L	L	H *	OFF
L	H		CINEMA 1
H	H		CINEMA 2
L *	L *	L *	CINEMA 3

L : 0V, H : 5.1V

Note : PRO-97 only

IC903 (PD5219A)

MTS Control Logic

53 pin (MTS 0)	52 pin (MTS 1)	MTS
L	L	MAIN / SAP
H	L	MAIN
L	H	SAP
H	H	MONO

L : 0V, H : 5.1V

IC903 (PD5219A)

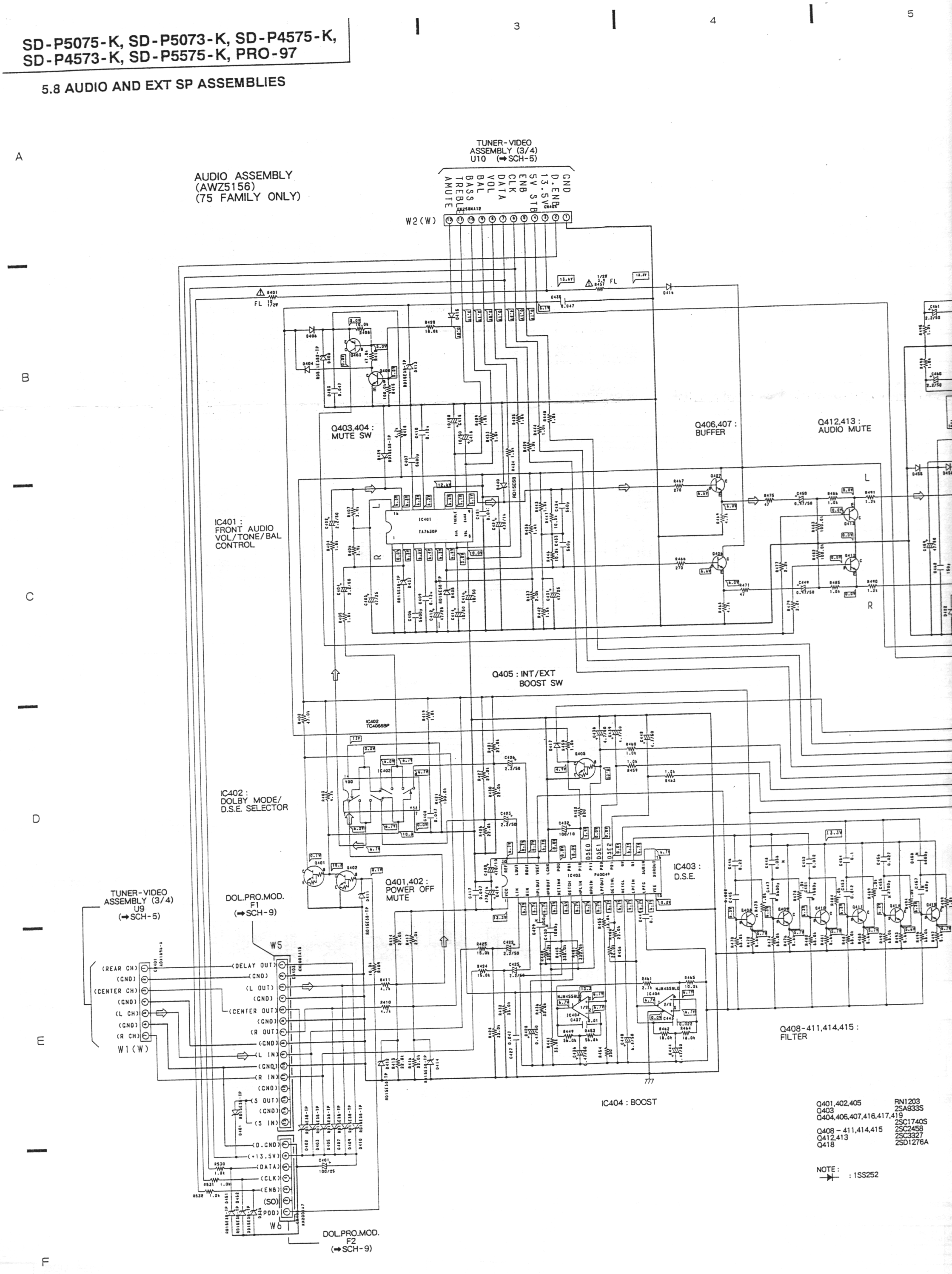
	NORMAL	at SCREEN MUTE
33 pin (B-OFF)	0V	5.1V
34 pin (G-OFF)	0V	5.1V
35 pin (R-OFF)	0V	5.1V

V : Voltage

TUNER-VIDEO ASSY (4/4)

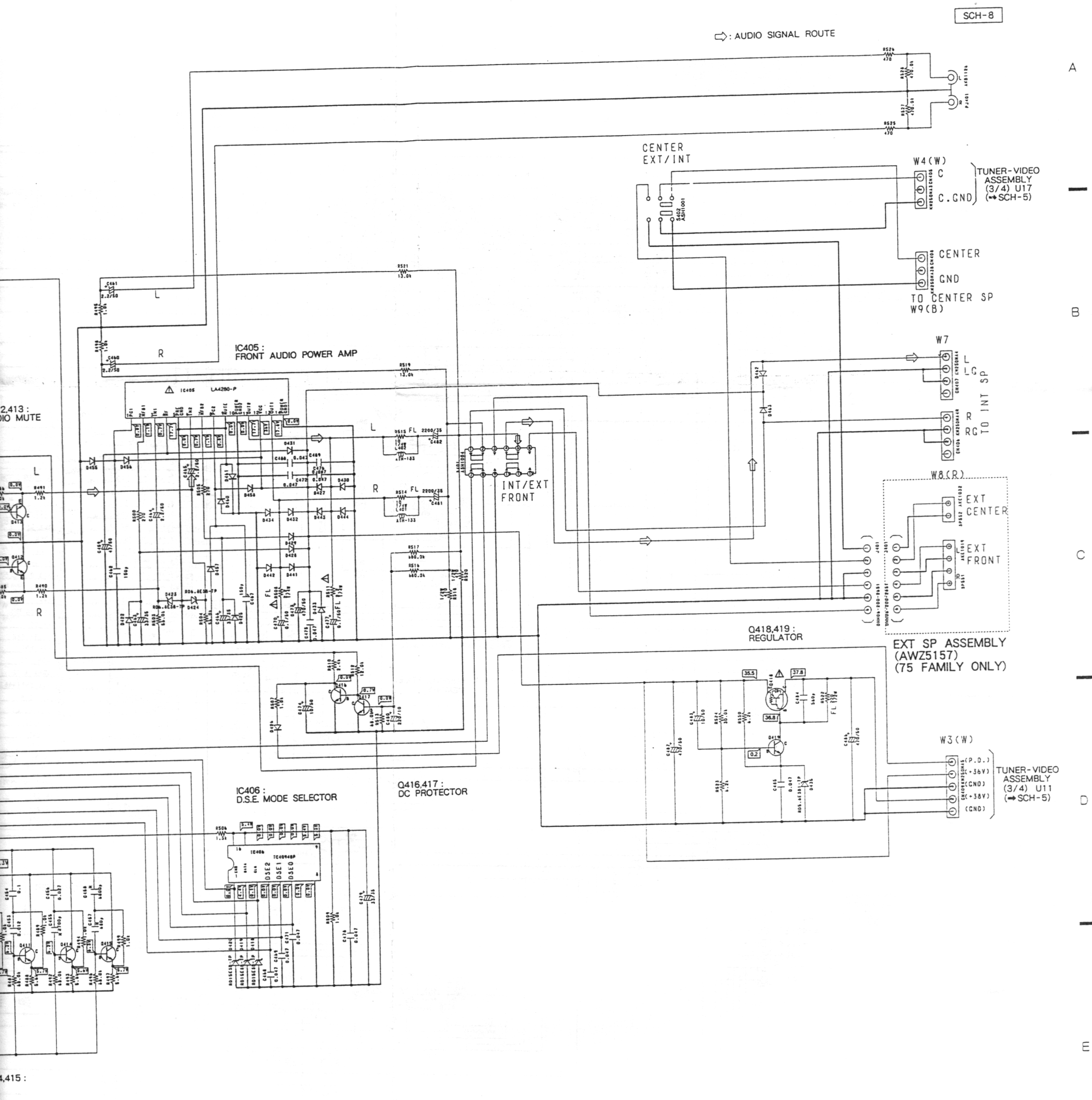
SCH-

5.8 AUDIO AND EXT SP ASSEMBLIES


3
4
5
A
B
C
D
E
F
TUNER-VIDEO ASSEMBLY (3/4) U10 (➡SCH-5)
AUDIO ASSEMBLY (AWZ5156) (75 FAMILY ONLY)
W2 (W)
GND
D.ENB
13.5V
5V STB
ENB
CLK
DATA
VOL
BAL
BASS
TREBLE
AMUTE
Q403,404 : MUTE SW
Q406,407 : BUFFER
Q412,413 : AUDIO MUTE
IC401 : FRONT AUDIO VOL/TONE/BAL CONTROL
IC401 TA7630P
L
R
Q405 : INT/EXT BOOST SW
IC402 TC4066BP
IC402 : DOLBY MODE/ D.S.E. SELECTOR
Q401,402 : POWER OFF MUTE
IC403 : D.S.E.
IC403 PA0049
TUNER-VIDEO ASSEMBLY (3/4) U9 (➡SCH-5)
DOL.PRO.MOD. F1 (➡SCH-9)
W5
(REAR CH)
(GND)
(CENTER CH)
(GND)
(L CH)
(GND)
(R CH)
W1 (W)
(DELAY OUT)
(GND)
(L OUT)
(GND)
(CENTER OUT)
(GND)
(R OUT)
(GND)
(L IN)
(GND)
(R IN)
(GND)
(S OUT)
(GND)
(S IN)
(D.GND)
(+13.5V)
(DATA)
(CLK)
(ENB)
(SO)
(POD)
W6
DOL.PRO.MOD. F2 (➡SCH-9)
IC404 NJM4558LD
IC404 : BOOST
Q408-411,414,415 : FILTER

Q401,402,405	RN1203
Q403	2SA933S
Q404,406,407,416,417,419	2SC1740S
Q408 – 411,414,415	2SC2458
Q412,413	2SC3327
Q418	2SD1276A

NOTE :
⊣▶⊢ : 1SS252


SCH-8
⇨: AUDIO SIGNAL ROUTE
CENTER
EXT/INT
W4(W)
C
C.GND
TUNER-VIDEO ASSEMBLY (3/4) U17 (➡SCH-5)
CENTER
GND
TO CENTER SP
W9(B)
W7
L
LG
R
RG
TO INT SP
W8(R)
EXT CENTER
EXT FRONT
INT/EXT FRONT
EXT SP ASSEMBLY (AWZ5157) (75 FAMILY ONLY)
IC405 : FRONT AUDIO POWER AMP
LA4280-P
2,413 :
IO MUTE
Q418,419 : REGULATOR
Q416,417 : DC PROTECTOR
IC406 : D.S.E. MODE SELECTOR
TC4094BP
DSE2
DSE1
DSE0
W3(W)
(P.D.)
(+36V)
(GND)
(+38V)
(GND)
TUNER-VIDEO ASSEMBLY (3/4) U11 (➡SCH-5)
35.5
37.8
36.8
0.2
L
R
FL
,415 :

402,405 RN1203
2SA933S
406,407,416,417,419
2SC1740S
– 411,414,415 2SC2458
413 2SC3327
2SD1276A

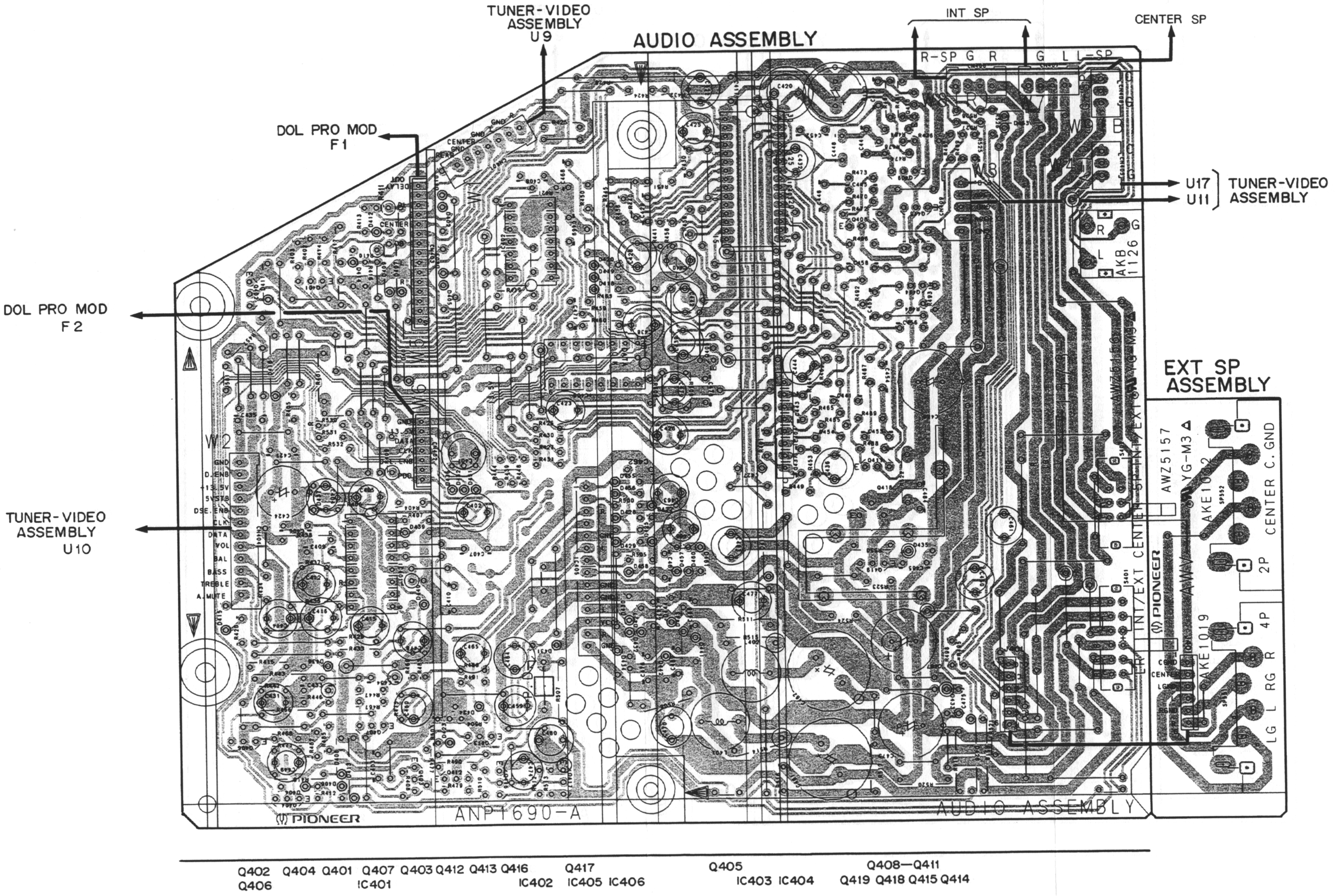
: 1SS252

TRUTH TABLE (IC406)

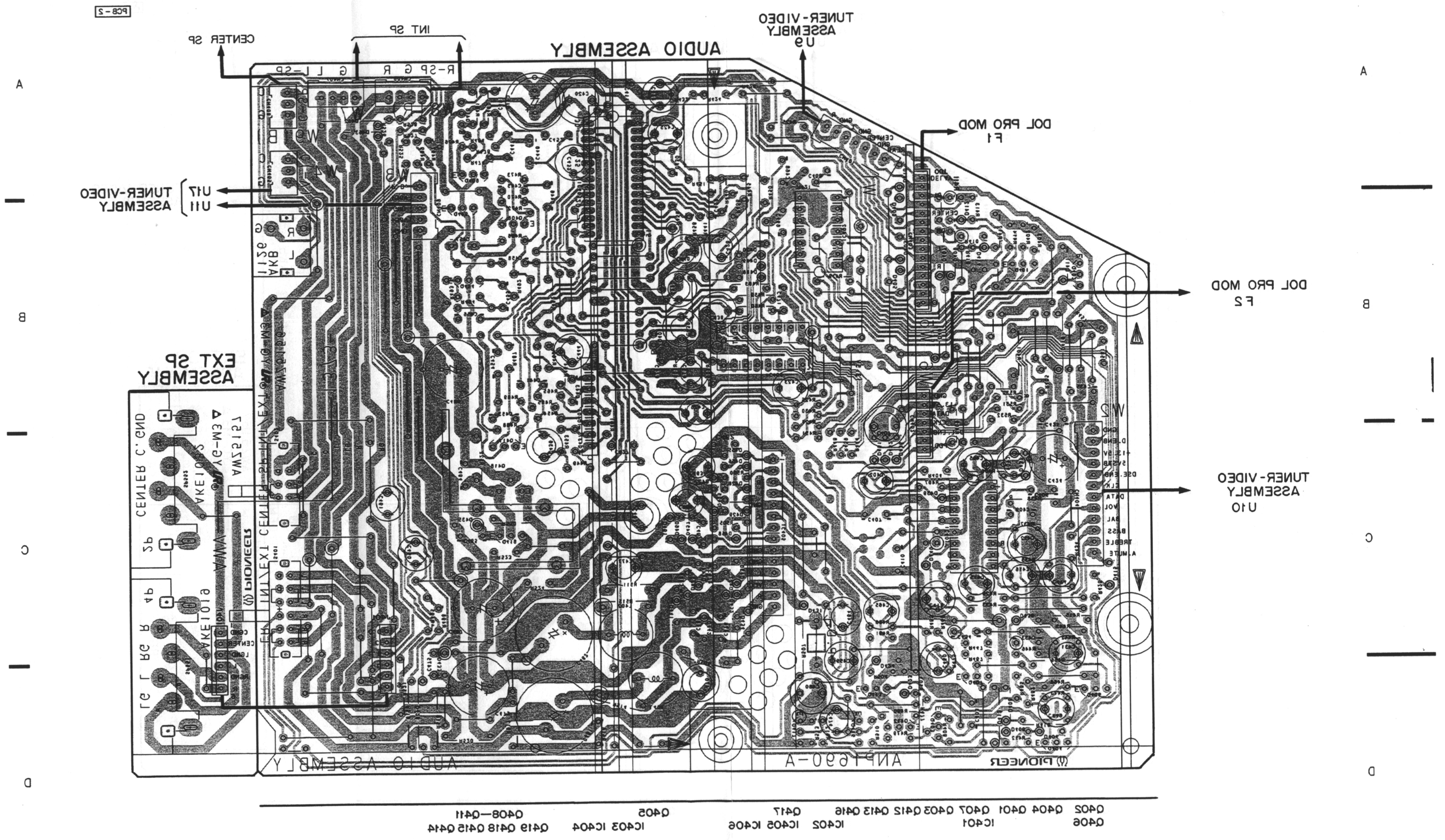
	DSE0 (PIN 6)	DSE1 (PIN 5)	DSE2 (PIN 4)
OFF	L	L	L
STADIUM	L	L	H
S. S	L	H	H

AUDIO ASSY,
EXT SP ASSY

SCH-8


1
2
3
4
A
B
C
D
TUNER-VIDEO ASSEMBLY U9
AUDIO ASSEMBLY
INT SP
R-SP G R
G L L-SP
CENTER SP
DOL PRO MOD F1
DOL PRO MOD F2
U17
U11
TUNER-VIDEO ASSEMBLY
AKB 1126
R
L
G
W2
W8
W9
GND
D.ENB
+13.5V
5VSTB
DSE.ENB
CLK
DATA
VOL
BAL
BASS
TREBLE
A.MUTE
TUNER-VIDEO ASSEMBLY U10
AWZ5156
YG-M3
INT/EXT CENTER SP
EXT SP ASSEMBLY
AWZ5157
YG-M3
AKE1012
AKE1019
C.GND
CENTER
2P
4P
R
RG
L
LG
PIONEER
ANP1690-A
AUDIO ASSEMBLY
Q402
Q406
Q404
Q401
Q407
IC401
Q403
Q412
Q413
Q416
IC402
Q417
IC405
IC406
Q405
IC403
IC404
Q408—Q411
Q419
Q418
Q415
Q414

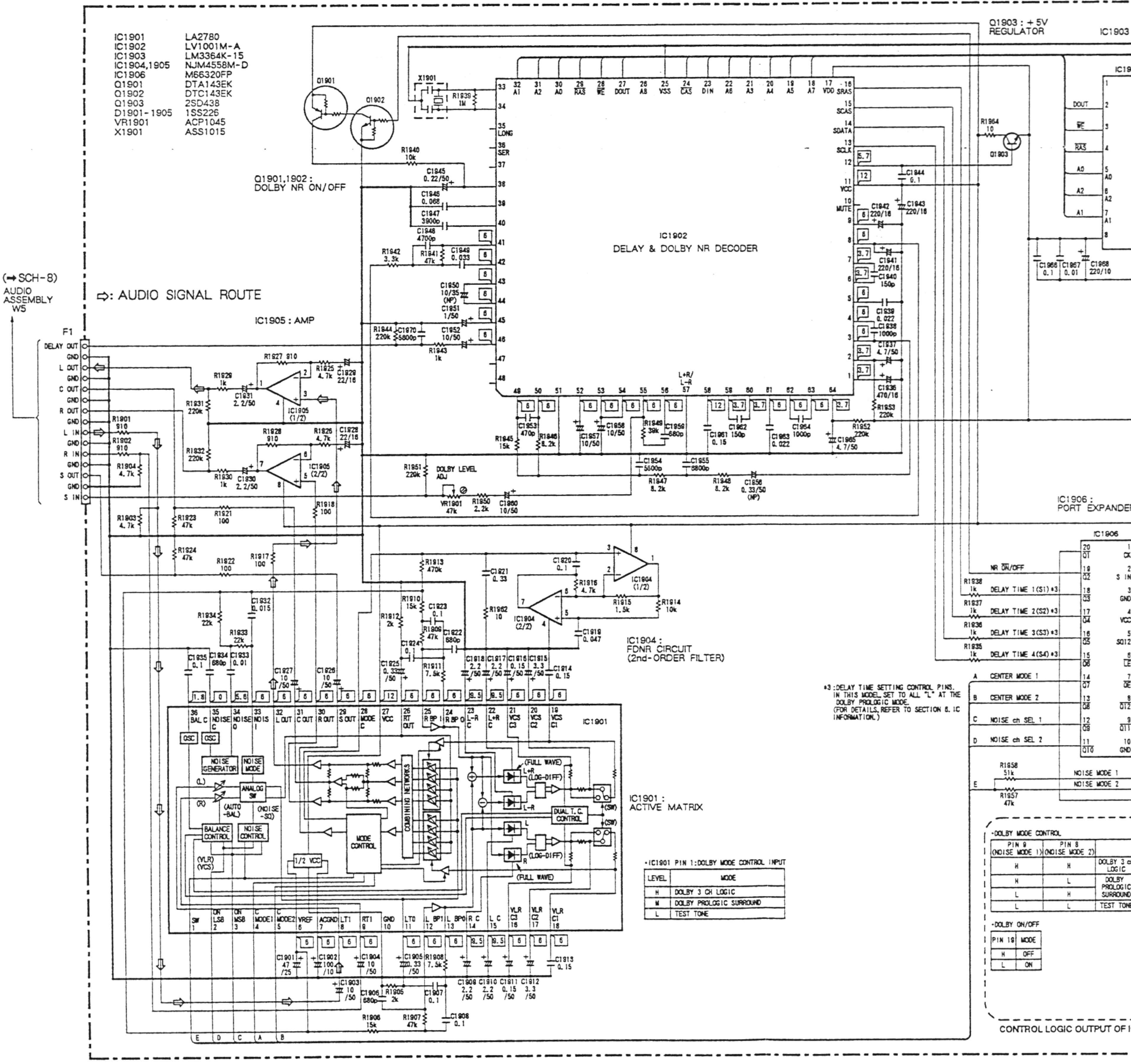
● This diagram is viewed from the mounted parts side.


PCB-2
AUDIO ASSEMBLY
CENTER SP
INT SP
L-SP L G R-SP G R
TUNER-VIDEO ASSEMBLY U9
DOL PRO MOD F1
DOL PRO MOD F2
TUNER-VIDEO ASSEMBLY U17 U11
TUNER-VIDEO ASSEMBLY U10
EXT SP ASSEMBLY
CENTER C, GND
2P
4P
LG L RG R
AKE1019
AWZ5151
AKE1018
PIONEER
ANP1690-A
AUDIO ASSEMBLY
GND
D.ENB
+15.5V
SYSB
DSE.ENB
CLK
DATA
VOL
BAL
BASS
TREBLE
A.MUTE
W2
Q402 Q404 Q401 Q407 Q403 Q412 Q413 Q416 Q417 Q405 Q408—Q411
Q406 IC401 IC402 IC405 IC406 IC403 IC404 Q419 Q418 Q415 Q414
1 2 3 4 5 6
A B C D

• This diagram is viewed from the foil side.

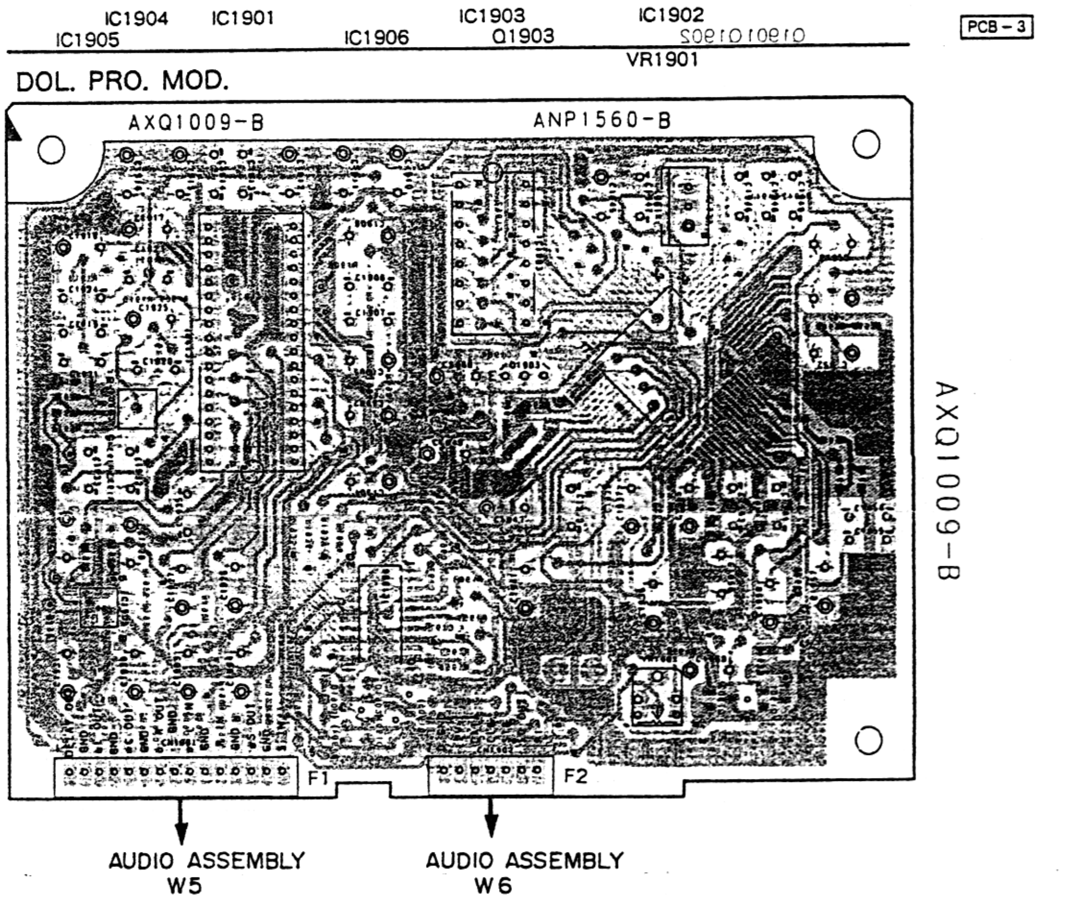
5.9 DOL. PRO. MOD.

DOL. PRO. MOD. (AXQ1009) (75 FAMILY ONLY)

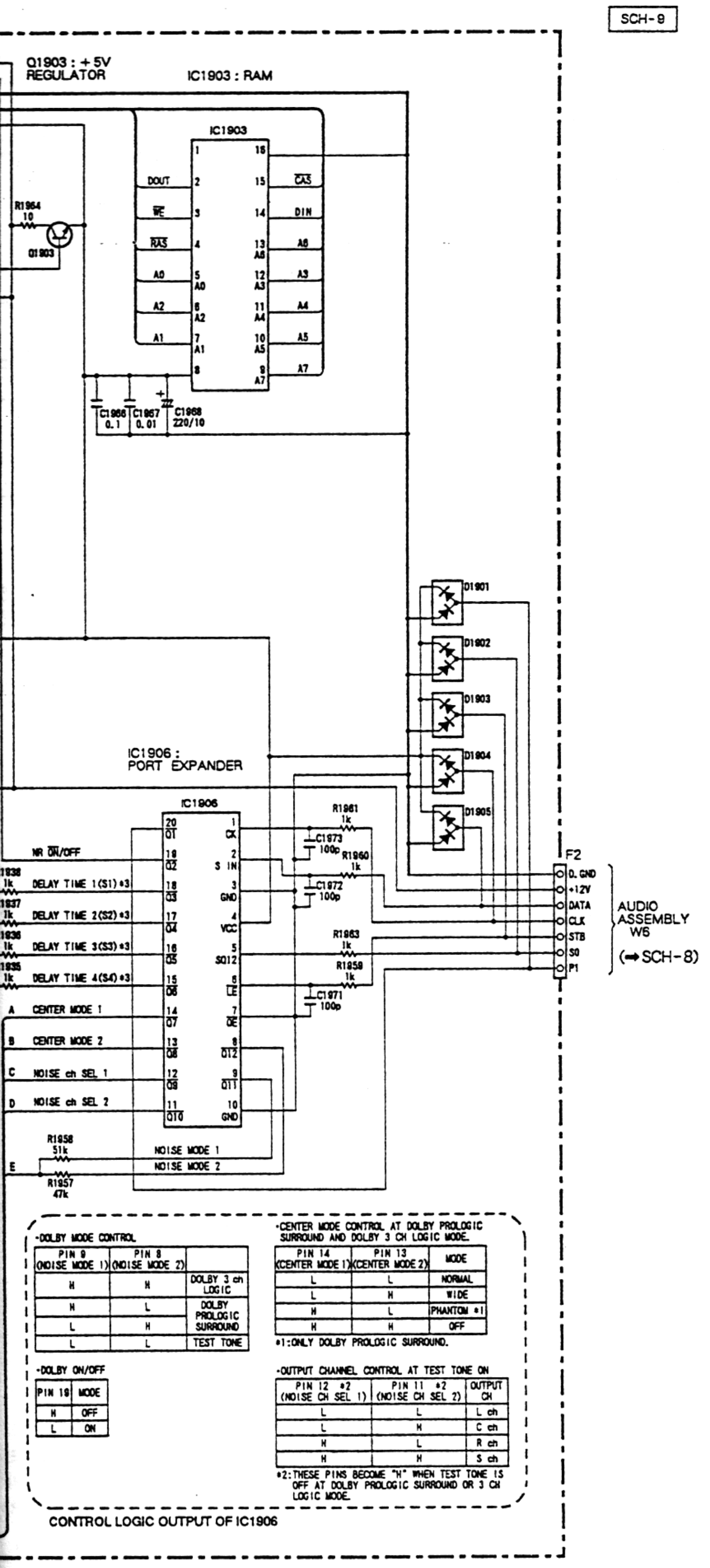

IC1901 LA2780
IC1902 LV1001M-A
IC1903 LM3364K-15
IC1904,1905 NJM4558M-D
IC1906 M66320FP
Q1901 DTA143EK
Q1902 DTC143EK
Q1903 2SD438
D1901-1905 1SS226
VR1901 ACP1045
X1901 ASS1015
Q1901,1902 : DOLBY NR ON/OFF
Q1903 : +5V REGULATOR
IC1903
IC1902 DELAY & DOLBY NR DECODER
(→SCH-8) AUDIO ASSEMBLY W5
F1
DELAY OUT
GND
L OUT
GND
C OUT
GND
R OUT
GND
L IN
GND
R IN
GND
S OUT
GND
S IN
⇨: AUDIO SIGNAL ROUTE
IC1905 : AMP
DOLBY LEVEL ADJ
IC1906 : PORT EXPANDER
NR ON/OFF
DELAY TIME 1(S1)*3
DELAY TIME 2(S2)*3
DELAY TIME 3(S3)*3
DELAY TIME 4(S4)*3
A CENTER MODE 1
B CENTER MODE 2
C NOISE ch SEL 1
D NOISE ch SEL 2
E
NOISE MODE 1
NOISE MODE 2
IC1904 : FDNR CIRCUIT (2nd-ORDER FILTER)
IC1901 : ACTIVE MATRIX
NOISE GENERATOR
NOISE MODE
ANALOG SW
(AUTO -BAL)
(NOISE -SQ)
BALANCE CONTROL
NOISE CONTROL
MODE CONTROL
COMBINING NETWORKS
1/2 VCC
(FULL WAVE)
(LOG-DIFF)
DUAL T.C CONTROL
(SW)
*3 :DELAY TIME SETTING CONTROL PINS. IN THIS MODEL, SET TO ALL "L" AT THE DOLBY PROLOGIC MODE. (FOR DETAILS, REFER TO SECTION 6. IC INFORMATION.)
•IC1901 PIN 1:DOLBY MODE CONTROL INPUT
LEVEL | MODE
H | DOLBY 3 CH LOGIC
M | DOLBY PROLOGIC SURROUND
L | TEST TONE
•DOLBY MODE CONTROL
PIN 9 (NOISE MODE 1) | PIN 8 (NOISE MODE 2)
H | H | DOLBY 3 c LOGIC
H | L | DOLBY PROLOGIC SURROUND
L | H
L | L | TEST TONE
•DOLBY ON/OFF
PIN 19 | MODE
H | OFF
L | ON
CONTROL LOGIC OUTPUT OF I

SCH-9

DOL. PRO. MOD.


PCB-3
IC1904
IC1901
IC1905
IC1906
IC1903
Q1903
IC1902
Q1901 Q1902
VR1901
DOL. PRO. MOD.
AXQ1009-B
ANP1560-B
F1
F2
AUDIO ASSEMBLY
W5
AUDIO ASSEMBLY
W6

- This diagram is viewed from the pink colored foil side.
- This PCB is double sided.


SCH-8
Q1903 : +5V
REGULATOR
IC1903 : RAM
IC1903
DOUT
WE
RAS
A0
A2
A1
CAS
DIN
A6
A3
A4
A5
A7
R1964
10
Q1903
C1966
0.1
C1967
0.01
C1968
220/10
D1901
D1902
D1903
D1904
D1905
IC1906 :
PORT EXPANDER
IC1906
NR ON/OFF
DELAY TIME 1(S1)*3
DELAY TIME 2(S2)*3
DELAY TIME 3(S3)*3
DELAY TIME 4(S4)*3
A CENTER MODE 1
B CENTER MODE 2
C NOISE ch SEL 1
D NOISE ch SEL 2
E
R1938 1k
R1937 1k
R1936 1k
R1935 1k
R1958
51k
R1957
47k
NOISE MODE 1
NOISE MODE 2
CK
S IN
GND
VCC
SO12
LE
OE
O12
O11
GND
R1961
1k
C1973
100p
R1960
1k
C1972
100p
R1963
1k
R1959
1k
C1971
100p
F2
D. GND
+12V
DATA
CLK
STB
S0
P1
AUDIO
ASSEMBLY
W6
(⇒SCH-8)

·DOLBY MODE CONTROL

PIN 9 (NOISE MODE 1)	PIN 8 (NOISE MODE 2)	
H	H	DOLBY 3 ch LOGIC
H	L	DOLBY PROLOGIC SURROUND
L	H	
L	L	TEST TONE

·CENTER MODE CONTROL AT DOLBY PROLOGIC SURROUND AND DOLBY 3 CH LOGIC MODE.

PIN 14 (CENTER MODE 1)	PIN 13 (CENTER MODE 2)	MODE
L	L	NORMAL
L	H	WIDE
H	L	PHANTOM *1
H	H	OFF

*1:ONLY DOLBY PROLOGIC SURROUND.

·DOLBY ON/OFF

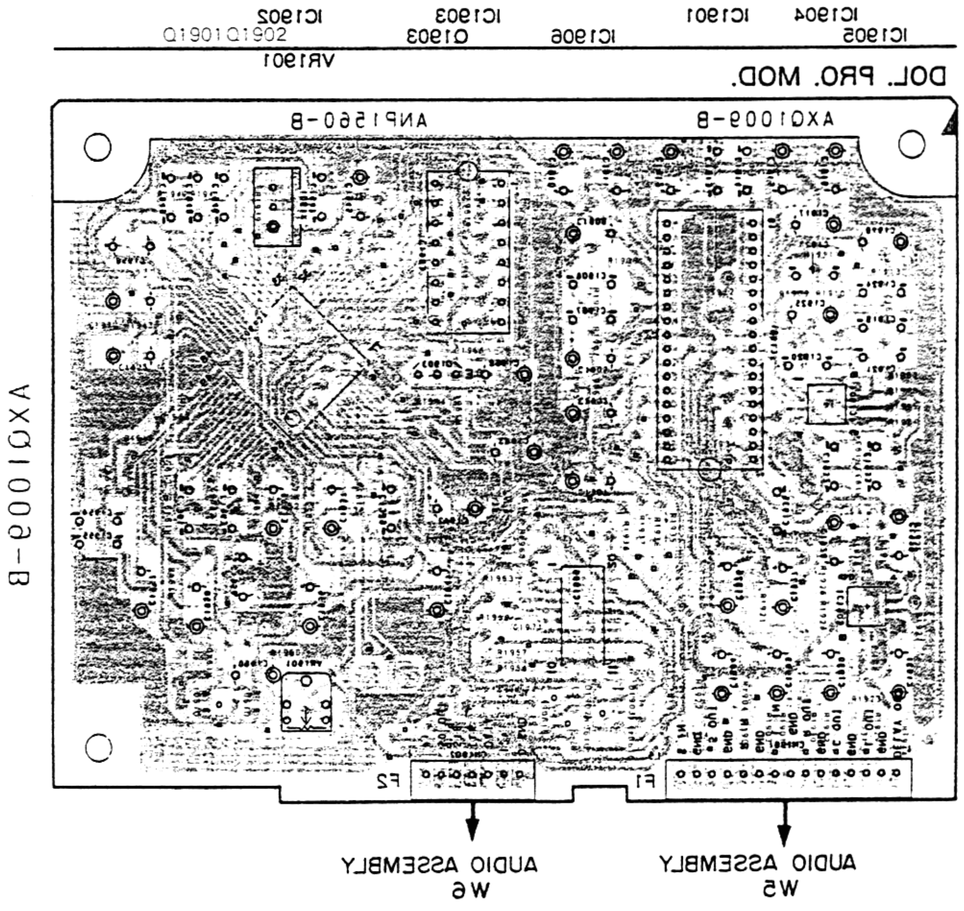
PIN 19	MODE
H	OFF
L	ON

·OUTPUT CHANNEL CONTROL AT TEST TONE ON

PIN 12 *2 (NOISE CH SEL 1)	PIN 11 *2 (NOISE CH SEL 2)	OUTPUT CH
L	L	L ch
L	H	C ch
H	L	R ch
H	H	S ch

*2:THESE PINS BECOME "H" WHEN TEST TONE IS OFF AT DOLBY PROLOGIC SURROUND OR 3 CH LOGIC MODE.

CONTROL LOGIC OUTPUT OF IC1906


IC1902
Q1901 Q1902
IC1903
Q1903
IC1906
IC1901
IC1904
IC1905
VR1901
DOL. PRO. MOD.
ANP1560-B
AXQ1009-B
F2
F1
AUDIO ASSEMBLY
W6
AUDIO ASSEMBLY
W5

- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.

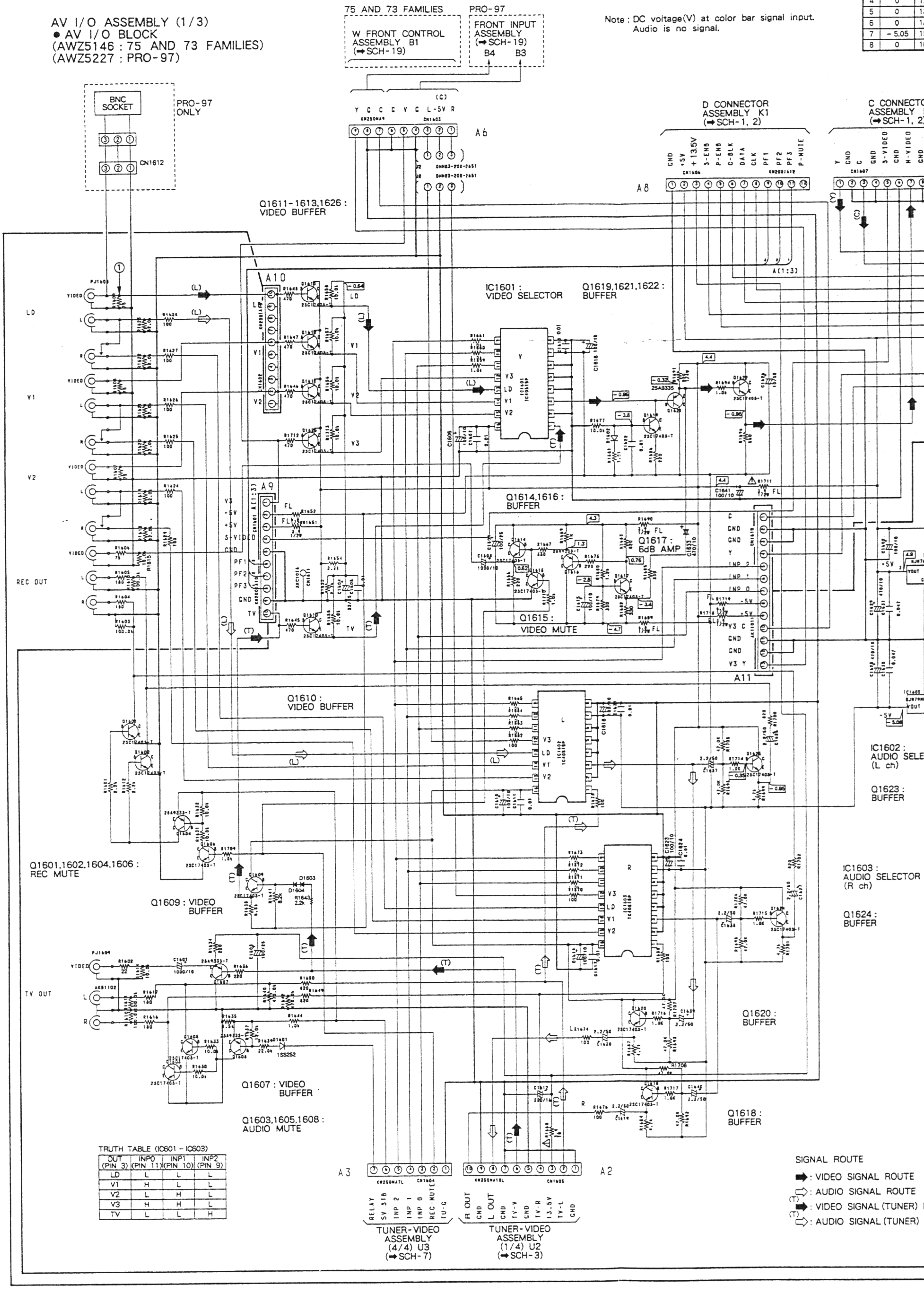
DOL. PRO. MOD. SCH-

5.10 AV I/O (1/3), Y/C SELECTOR AND P IN P SELECTOR ASSEMBLIES

IC1601 (TC4051

Pin No.	Voltage (V)	Pi No
1	2.06	9
2	0	1
3	− 0.8	1
4	0	1
5	0	1
6	0	1
7	− 5.05	1
8	0	1

Note : DC voltage(V) at color bar signal input.
Audio is no signal.


AV I/O ASSEMBLY (1/3)
● AV I/O BLOCK
(AWZ5146 : 75 AND 73 FAMILIES)
(AWZ5227 : PRO-97)
75 AND 73 FAMILIES
W FRONT CONTROL ASSEMBLY B1 (➡SCH-19)
PRO-97
FRONT INPUT ASSEMBLY (➡SCH-19)
B4 B3
BNC SOCKET
PRO-97 ONLY
CN1612
A6
Y G C G V G L -5V R
D CONNECTOR ASSEMBLY K1 (➡SCH-1, 2)
GND +5V +13.5V P-ENB S-ENB C-BLK DATA CLK PF1 PF2 PF3 P-MUTE
A8
C CONNECTOR ASSEMBLY (➡SCH-1, 2)
Y GND C GND S-VIDEO GND M-VIDEO GND
Q1611-1613,1626 : VIDEO BUFFER
A10
LD V1 V2 V3
IC1601 : VIDEO SELECTOR
Q1619,1621,1622 : BUFFER
VIDEO LD V1 V2 REC OUT
A9
V3 -5V +5V S-VIDEO GND PF1 PF2 PF3 GND TV
Q1614,1616 : BUFFER
Q1617 : 6dB AMP
Q1615 : VIDEO MUTE
A11
Q1610 : VIDEO BUFFER
IC1602 : AUDIO SELE (L ch)
Q1623 : BUFFER
Q1601,1602,1604,1606 : REC MUTE
Q1609 : VIDEO BUFFER
IC1603 : AUDIO SELECTOR (R ch)
Q1624 : BUFFER
TV OUT
Q1620 : BUFFER
Q1607 : VIDEO BUFFER
Q1603,1605,1608 : AUDIO MUTE
Q1618 : BUFFER
A3 A2
RELAY SV S18 INP 2 INP 1 INP 0 REC-MUTE TU-G
R OUT GND L OUT GND TV-V GND TV-R 13.5V TV-L GND
TUNER-VIDEO ASSEMBLY (4/4) U3 (➡SCH-7)
TUNER-VIDEO ASSEMBLY (1/4) U2 (➡SCH-3)
SIGNAL ROUTE
➡ : VIDEO SIGNAL ROUTE
⇨ : AUDIO SIGNAL ROUTE
(T) ➡ : VIDEO SIGNAL (TUNER)
(T) ⇨ : AUDIO SIGNAL (TUNER)

TRUTH TABLE (IC601 - IC603)

OUT (PIN 3)	INP0 (PIN 11)	INP1 (PIN 10)	INP2 (PIN 9)
LD	L	L	L
V1	H	L	L
V2	L	H	L
V3	H	H	L
TV	L	L	H

SCH-10 AV I/O ASSY (1/3),
Y/C SELECTOR ASSY,
P IN P SELECTOR ASSY

IC1601 (TC4051BP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	2.06	9	0
2	0	10	0
3	– 0.8	11	0
4	0	12	2.06
5	0	13	– 0.45
6	0	14	2.06
7	– 5.05	15	2.06
8	0	16	4.32

IC1602 (TC4051BP)

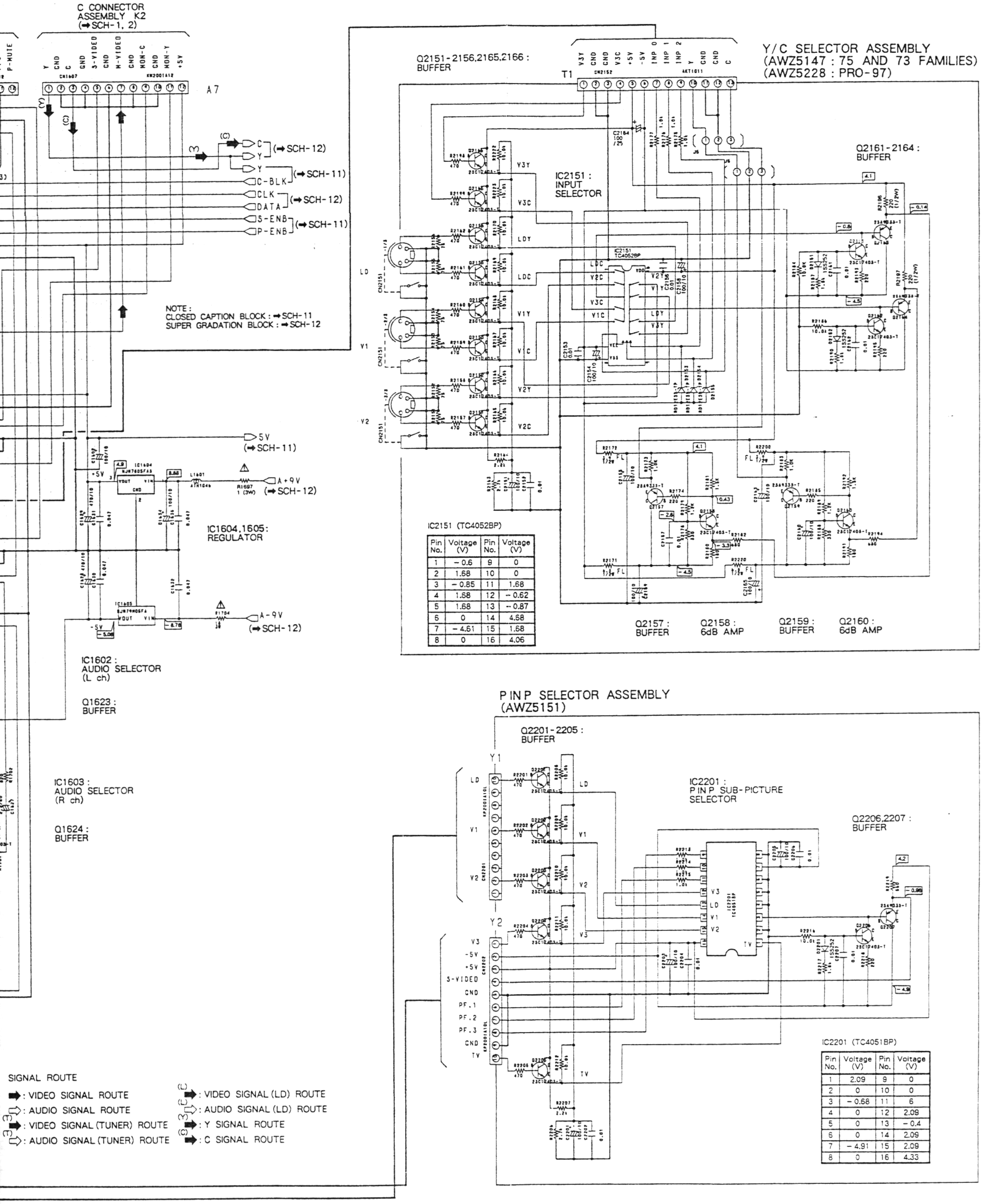
Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	9	0
2	0	10	0
3	0	11	0
4	0	12	– 1.55
5	0	13	0
6	0	14	0
7	– 5.05	15	0
8	0	16	– 4.32

IC1603 (TC4051BP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	9	0
2	0	10	0
3	0	11	0
4	0	12	– 1.55
5	0	13	0
6	0	14	0
7	– 5.05	15	0
8	0	16	– 4.32

nput.

SCH – 10


C CONNECTOR
ASSEMBLY K2
(➡SCH-1, 2)
Y GND C GND 3-VIDEO GND M-VIDEO GND MON-C GND MON-Y +5V
CN1607
KM200IA12
A7
P-MUTE
C
Y
Y
(➡SCH-12)
(➡SCH-11)
C-BLK
CLK
DATA
(➡SCH-12)
S-ENB
P-ENB
(➡SCH-11)
NOTE :
CLOSED CAPTION BLOCK : ➡SCH-11
SUPER GRADATION BLOCK : ➡SCH-12
5V
(➡SCH-11)
IC1604
NJ7805FA5
VOUT VIN
GND
L1601
R1697
1 (3W)
A+9V
(➡SCH-12)
IC1604,1605:
REGULATOR
IC1605
NJ7905FA
VOUT VIN
R1704
A-9V
(➡SCH-12)
+5V
-5V
4.9
4.88
-5.08
-8.78
IC1602 :
AUDIO SELECTOR
(L ch)
Q1623 :
BUFFER
IC1603 :
AUDIO SELECTOR
(R ch)
Q1624 :
BUFFER
Q2151-2156,2165,2166 :
BUFFER
T1
V3Y GND GND V3C +5V -5V INP 0 INP 1 INP 2 Y GND C
CN2152
AKT1011
Y/C SELECTOR ASSEMBLY
(AWZ5147 : 75 AND 73 FAMILIES)
(AWZ5228 : PRO-97)
IC2151 :
INPUT
SELECTOR
IC2151
TC4052BP
V3Y
V3C
LDY
LDC
V1Y
V1C
V2Y
V2C
LD
V1
V2
CN2151
2SC1740S
2SA933S
1SS252
Q2161-2164 :
BUFFER
4.1
-0.14
-0.6
-4.5
-4.5
-3.3
0.43
-2.6
Q2157 :
BUFFER
Q2158 :
6dB AMP
Q2159 :
BUFFER
Q2160 :
6dB AMP
SIGNAL ROUTE
➡ : VIDEO SIGNAL ROUTE
⇨ : AUDIO SIGNAL ROUTE
➡ : VIDEO SIGNAL (TUNER) ROUTE
⇨ : AUDIO SIGNAL (TUNER) ROUTE
➡ : VIDEO SIGNAL (LD) ROUTE
⇨ : AUDIO SIGNAL (LD) ROUTE
➡ : Y SIGNAL ROUTE
➡ : C SIGNAL ROUTE
P IN P SELECTOR ASSEMBLY
(AWZ5151)
Q2201-2205 :
BUFFER
Y1
LD
V1
V2
Y2
V3
-5V
+5V
S-VIDEO
GND
PF.1
PF.2
PF.3
GND
TV
IC2201 :
P IN P SUB-PICTURE
SELECTOR
IC2201
TC4051BP
Q2206,2207 :
BUFFER
4.2
-0.86
-4.9

IC2151 (TC4052BP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	– 0.6	9	0
2	1.68	10	0
3	– 0.85	11	1.68
4	1.68	12	– 0.62
5	1.68	13	– 0.87
6	0	14	4.68
7	– 4.61	15	1.68
8	0	16	4.06

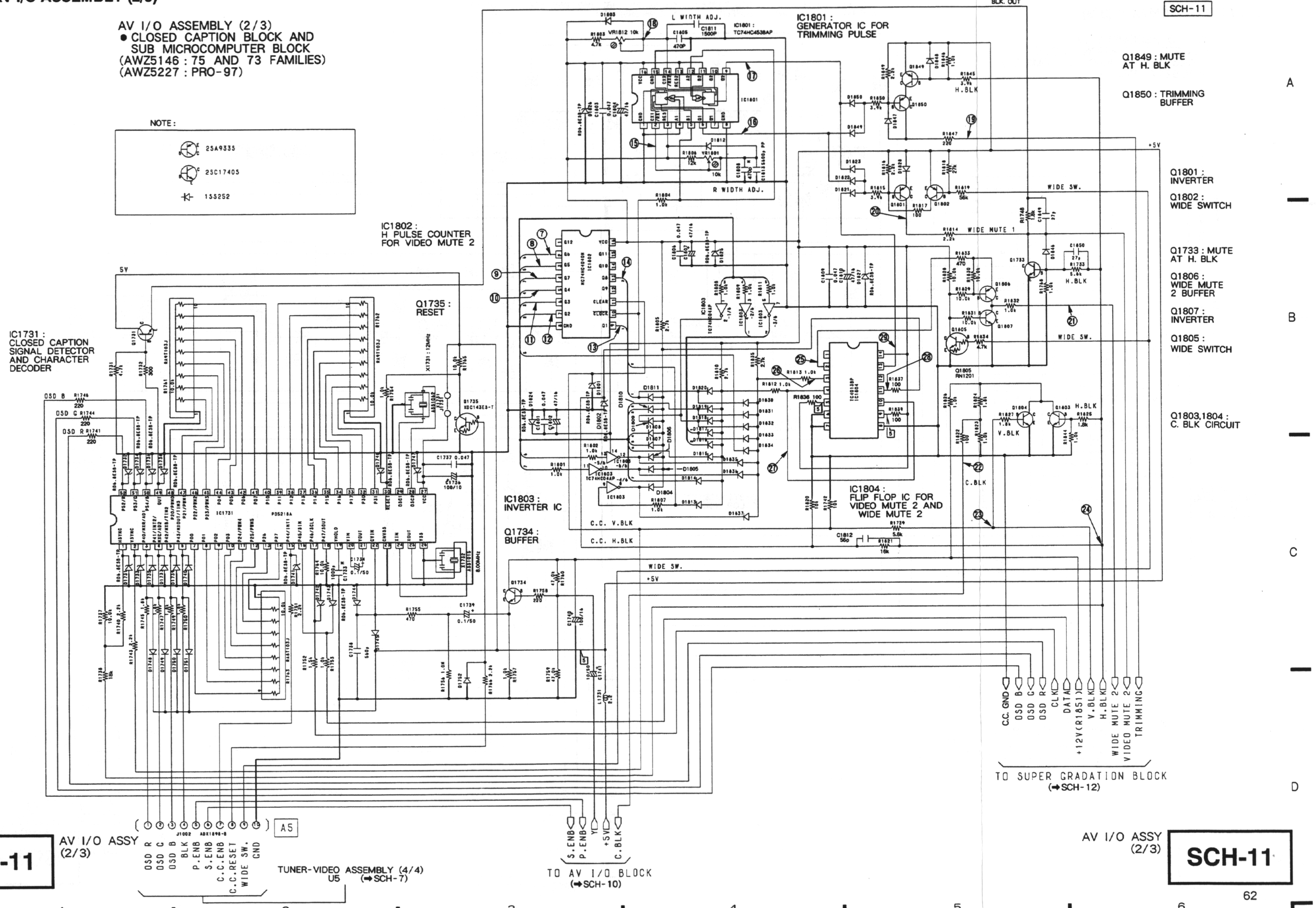
IC2201 (TC4051BP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	2.09	9	0
2	0	10	0
3	– 0.68	11	6
4	0	12	2.09
5	0	13	– 0.4
6	0	14	2.09
7	– 4.91	15	2.09
8	0	16	4.33

AV I/O ASSY (1/3),
Y/C SELECTOR ASSY,
P IN P SELECTOR
ASSY

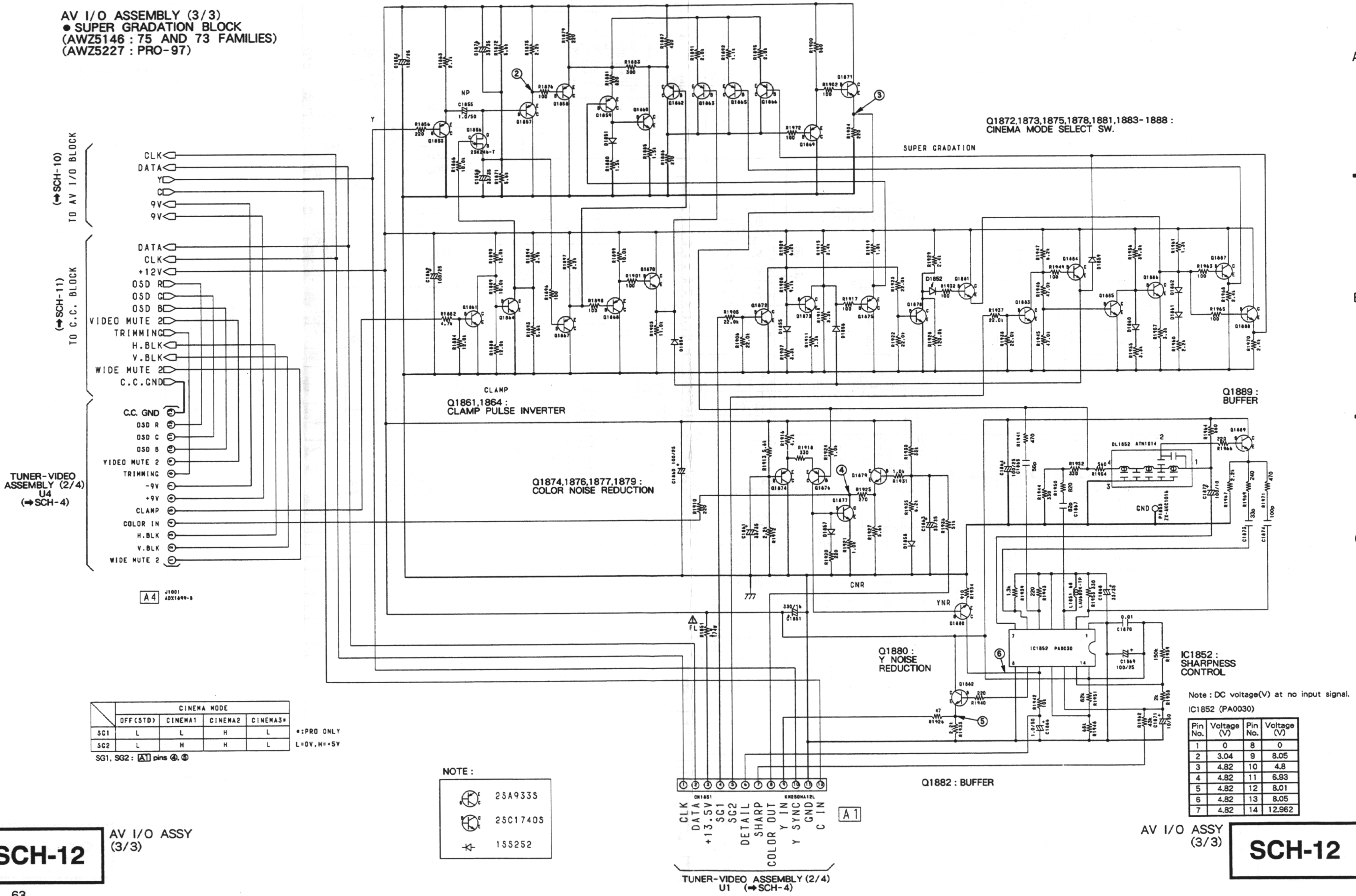
SCH-10

5.11 AV I/O ASSEMBLY (2/3)


SCH-11
AV I/O ASSEMBLY (2/3)
● CLOSED CAPTION BLOCK AND
SUB MICROCOMPUTER BLOCK
(AWZ5146 : 75 AND 73 FAMILIES)
(AWZ5227 : PRO-97)
NOTE :
2SA9335
2SC17405
1SS252
IC1731 :
CLOSED CAPTION
SIGNAL DETECTOR
AND CHARACTER
DECODER
IC1802 :
H PULSE COUNTER
FOR VIDEO MUTE 2
Q1735 :
RESET
IC1801 :
GENERATOR IC FOR
TRIMMING PULSE
IC1801 : TC74HC4538AP
L WIDTH ADJ.
R WIDTH ADJ.
BLK. OUT
Q1849 : MUTE
AT H. BLK
Q1850 : TRIMMING
BUFFER
Q1801 :
INVERTER
Q1802 :
WIDE SWITCH
Q1733 : MUTE
AT H. BLK
Q1806 :
WIDE MUTE
2 BUFFER
Q1807 :
INVERTER
Q1805 :
WIDE SWITCH
Q1803,1804 :
C. BLK CIRCUIT
WIDE SW.
WIDE MUTE 1
H.BLK
V.BLK
C.BLK
+5V
5V
IC1803 :
INVERTER IC
Q1734 :
BUFFER
IC1804 :
FLIP FLOP IC FOR
VIDEO MUTE 2 AND
WIDE MUTE 2
C.C. V.BLK
C.C. H.BLK
OSD B
OSD G
OSD R
IC1731
PD5218A
X1731 : 12MHz
8.00MHz
Q1805 RN1201
C.C. GND
OSD B
OSD G
OSD R
CLK
DATA
+12V(R1851)
V.BLK
H.BLK
WIDE MUTE 2
VIDEO MUTE 2
TRIMMING
TO SUPER GRADATION BLOCK
(➡SCH-12)
J1002
A5
OSD R
OSD G
OSD B
BLK
P.ENB
S.ENB
C.C.ENB
C.C.RESET
WIDE SW.
GND
TUNER-VIDEO ASSEMBLY (4/4)
U5 (➡SCH-7)
S.ENB
P.ENB
Y
+5V
C.BLK
TO AV I/O BLOCK
(➡SCH-10)
AV I/O ASSY
(2/3)

5.12 AV I/O ASSEMBLY (3/3)

AV I/O ASSEMBLY (3/3)
● SUPER GRADATION BLOCK
(AWZ5146 : 75 AND 73 FAMILIES)
(AWZ5227 : PRO-97)


Q1853 : BUFFER
Q1856 : Y CLAMP
Q1857,1858 : BUFFER
Q1859,1860,1862,1863,1865,1866 : Y COMPENSATION
Q1869,1871 : BUFFER
Q1872,1873,1875,1878,1881,1883-1888 : CINEMA MODE SELECT SW.
SUPER GRADATION
CLAMP
Q1861,1864 : CLAMP PULSE INVERTER
Q1889 : BUFFER
Q1874,1876,1877,1879 : COLOR NOISE REDUCTION
CNR
YNR
Q1880 : Y NOISE REDUCTION
IC1852 : SHARPNESS CONTROL
Q1882 : BUFFER
(➡SCH-10) TO AV I/O BLOCK
CLK
DATA
Y
C
9V
9V
(➡SCH-11) TO C.C. BLOCK
DATA
CLK
+12V
OSD R
OSD G
OSD B
VIDEO MUTE 2
TRIMMING
H.BLK
V.BLK
WIDE MUTE 2
C.C.GND
TUNER-VIDEO ASSEMBLY (2/4) U4 (➡SCH-4)
C.C. GND
OSD R
OSD G
OSD B
VIDEO MUTE 2
TRIMMING
-9V
+9V
CLAMP
COLOR IN
H.BLK
V.BLK
WIDE MUTE 2
A4
J1001 ADX1699-8
CN1851 KM250NA12L
CLK
DATA
+13.5V
SG1
SG2
DETAIL
SHARP
COLOR OUT
Y IN
Y SYNC
GND
C IN
A1
TUNER-VIDEO ASSEMBLY (2/4) U1 (➡SCH-4)
IC1852 PA0030
DL1852 ATH1014
GND
FL
Y

	CINEMA MODE			
	OFF(STD)	CINEMA1	CINEMA2	CINEMA3*
SG1	L	L	H	L
SG2	L	H	H	L

*:PRO ONLY
L=0V,H=+5V

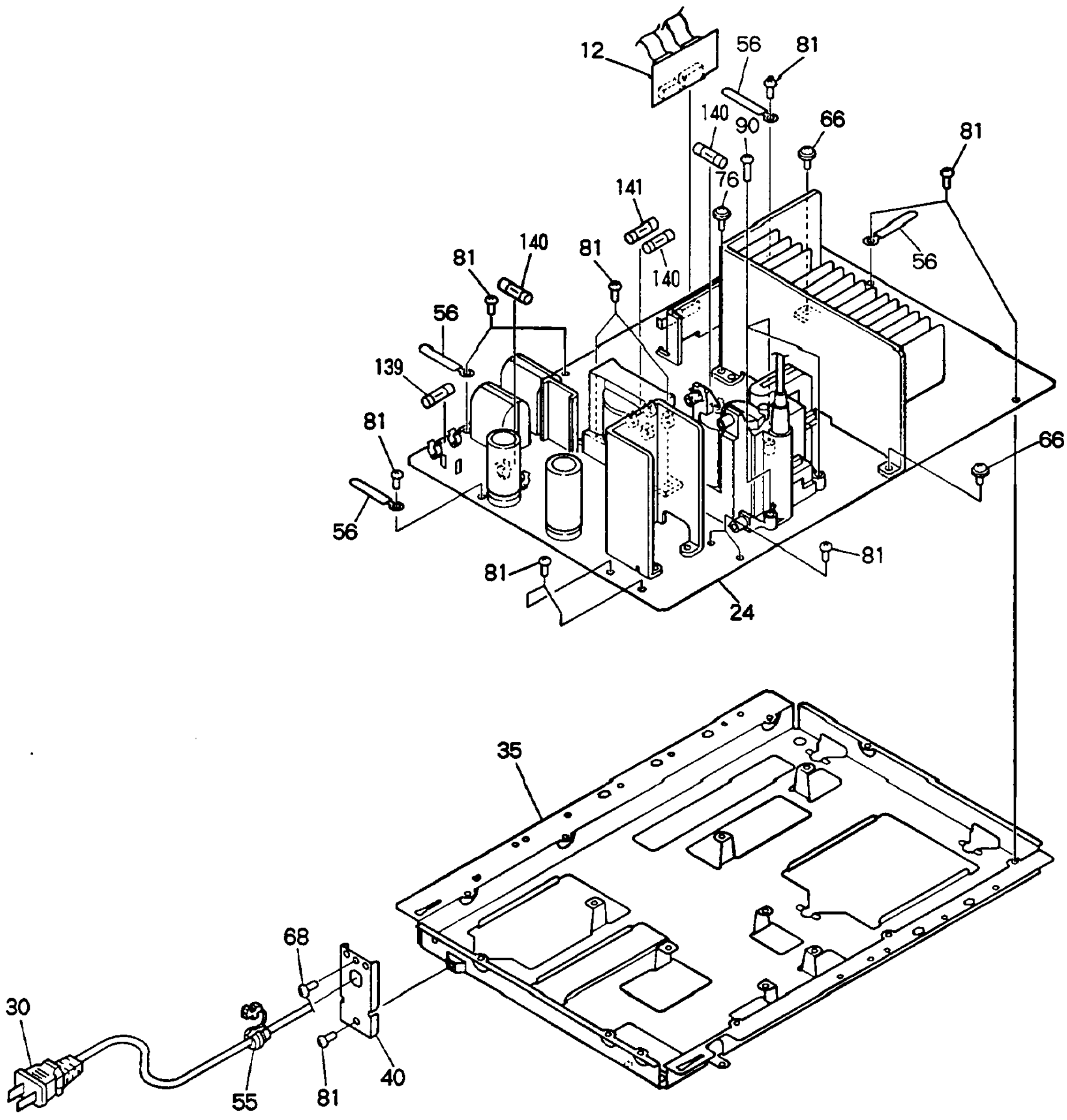
SG1, SG2 : A1 pins ④, ⑤

NOTE :

2SA933S
2SC1740S
1SS252

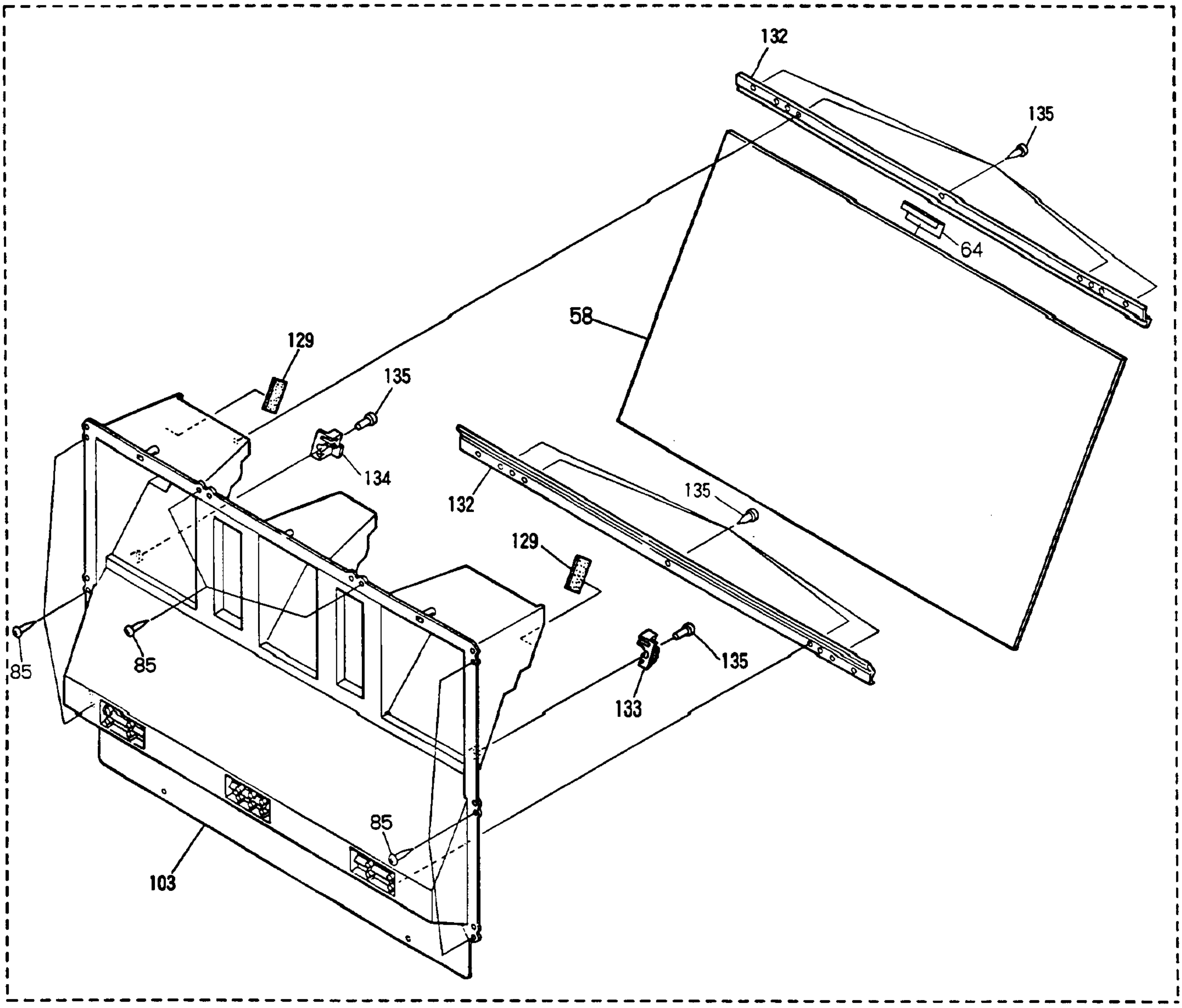
Note : DC voltage(V) at no input signal.
IC1852 (PA0030)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	8	0
2	3.04	9	8.05
3	4.82	10	4.8
4	4.82	11	6.93
5	4.82	12	8.01
6	4.82	13	8.05
7	4.82	14	12.962



(4) REAR VIEW

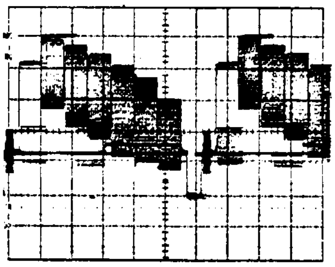
For SD-P5575-K


132
135
64
58
129
135
134
132
135
129
85
85
135
133
85
103

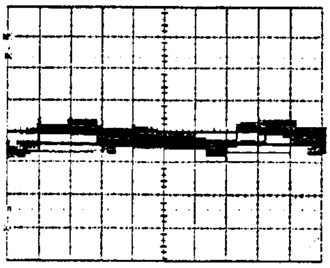
● Waveformes at AV I/O assembly

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

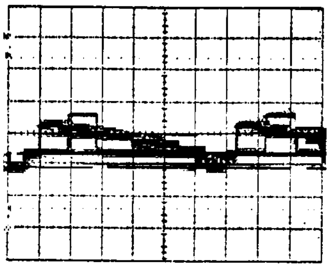
① **LD IN pin**
V range : 20mV/div.
H range : 10 μsec/div.



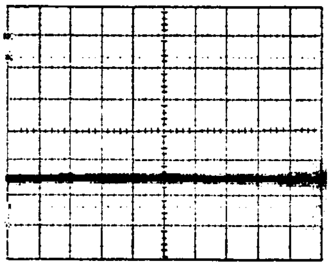
② **Q1857 Emitter**
V range : 2V/div.
H range : 10 μsec/div.



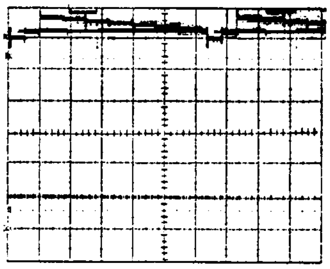
③ **Q1871 Emitter**
V range : 1V/div.
H range : 10 μsec/div.



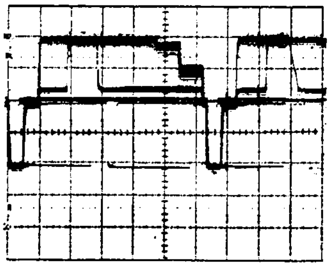
④ **Q1877 Corrector**
V range : 1V/div.
H range : 10 μsec/div.



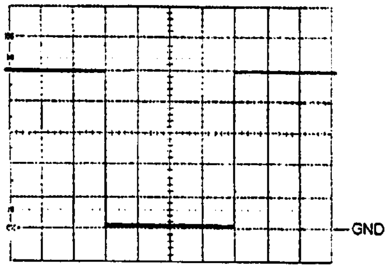
⑤ **Q1882 Emitter**
V range : 1V/div.
H range : 10 μsec/div.



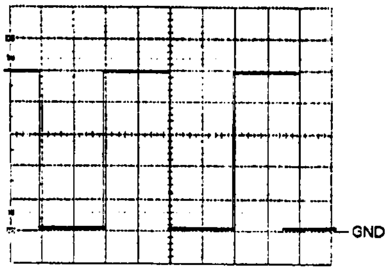
⑥ **IC1852 pin 10**
V range : 1V/div.
H range : 10 μsec/div.



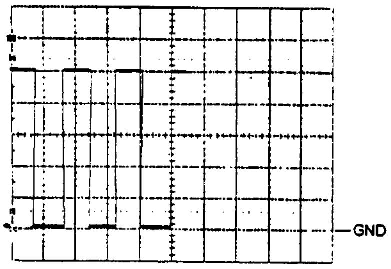
⑦ **IC1802 pin 2**
V range : 1V/div.
H range : 0.5msec/div.



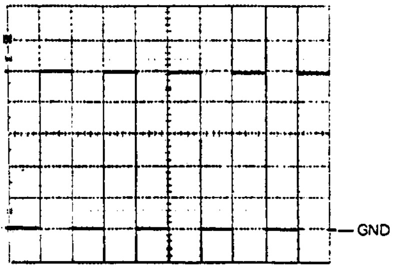
⑧ **IC1802 pin 3**
(V PARA. WAVE OUT)
V range : 1V/div.
H range : 0.5msec/div.



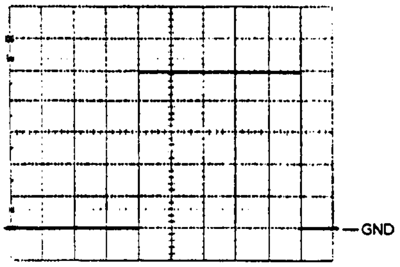
⑨ **IC1802 pin 4**
V range : 1V/div.
H range : 5msec/div.



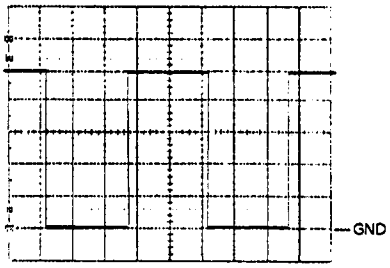
⑩ **IC1802 pin 5**
V range : 1V/div.
H range : 0.5 µsec/div.



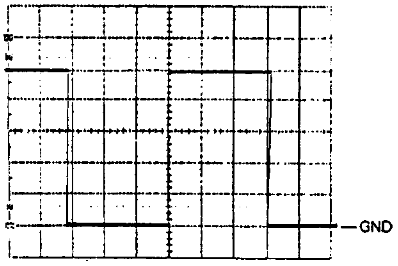
⑪ **IC1802 pin 6**
V range : 1V/div.
H range : 50 µsec/div.



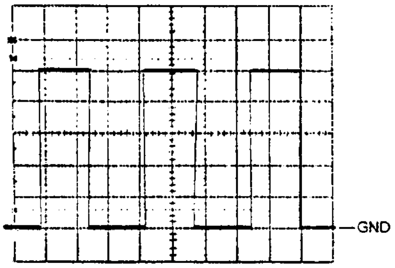
⑫ **IC1802 pin 7**
V range : 1V/div.
H range : 50 µsec/div.



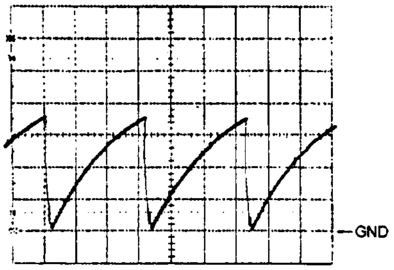
⑬ **IC1802 pin 9**
V range : 1V/div.
H range : 20 µsec/div.



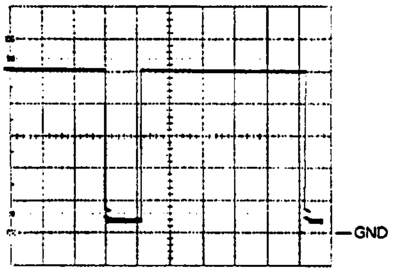
⑭ **IC1802 pin 13**
V range : 1V/div.
H range : 5msec/div.



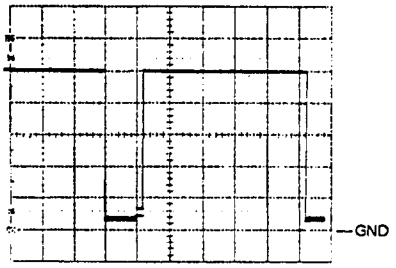
⑮ **IC1801 pin 2**
V range : 1V/div.
H range : 20 µsec/div.



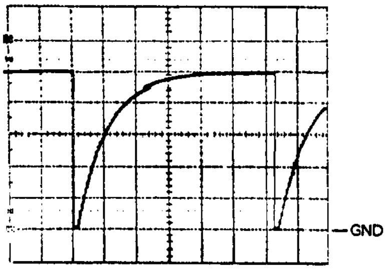
⑯ **IC1801 pin 6**
V range : 1V/div.
H range : 10 µsec/div.



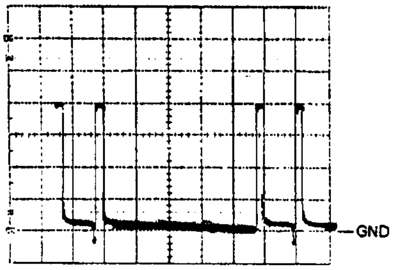
⑰ **IC1801 pin 9**
V range : 1V/div.
H range : 10 µsec/div.



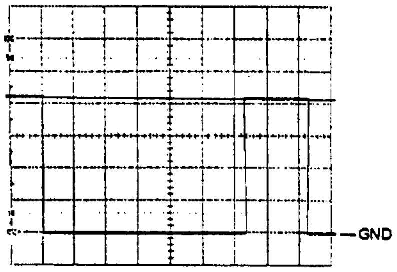
⑱ **IC1801 pin 14**
V range : 1V/div.
H range : 10 µsec/div.



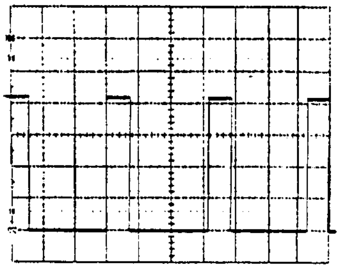
⑲ **Lead wire of R1847 (TRIMING)**
V range : 1V/div.(Triming ON)
0V at Triming OFF.
H range : 10 µsec/div.



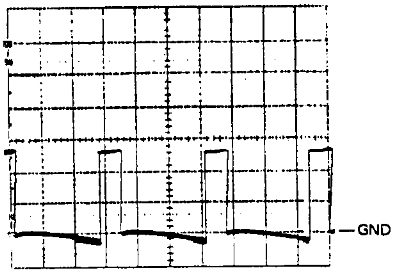
⑳-1 **Q1801 Collector (V rate)**
V range : 1V/div.
H range : 2msec/div.



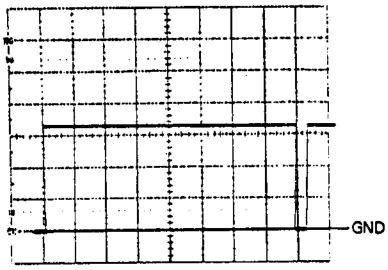
⑳-2 **Q1801 Collector (H rate)**
V range : 1V/div.
H range : 20msec/div.



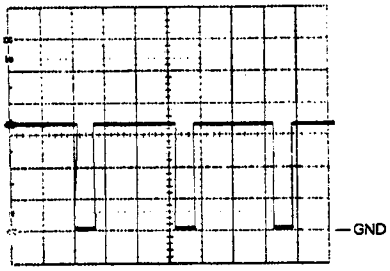
(21) **Lead wire of R1832**
(WIDE MUTE 2)
V range : 1V/div.(WIDE)
0V at NORMAL.
H range : 5msec/div.



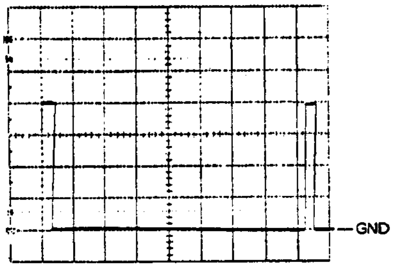
(22)-1 **Lead wire of R1822**
(C. BLK)(V rate)
V range : 1V/div.
H range : 2msec/div.



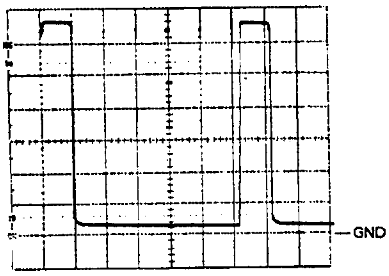
(22)-2 **Lead wire of R1822**
(C. BLK)(V rate)
V range : 1V/div.
H range : 20 μsec/div.



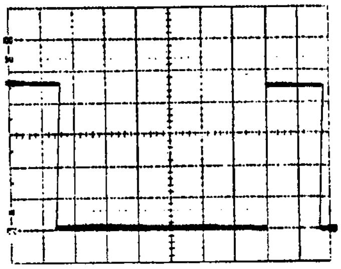
(23) **Between R1827 and R1739**
V range : 2V/div.
H range : 2msec/div.



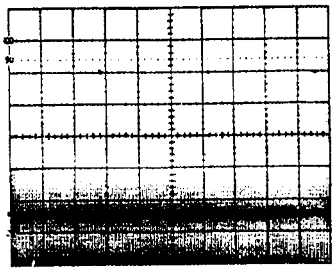
(24) **Between R1821 and R1825**
(H. BLK)
V range : 2V/div.
H range : 10 μsec/div.



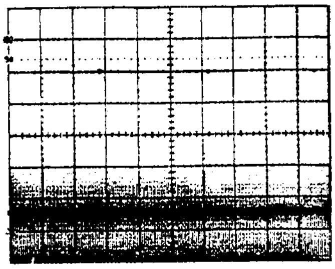
(25) **IC1804 pin 2**
V range : 1V/div.
H range : 2msec/div.



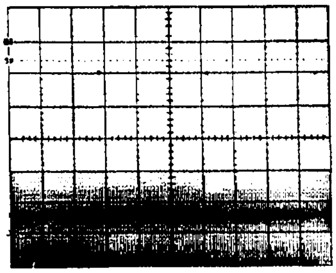
(26) **IC1804 pin 3**
V range : 1V/div.
H range : 5msec/div.



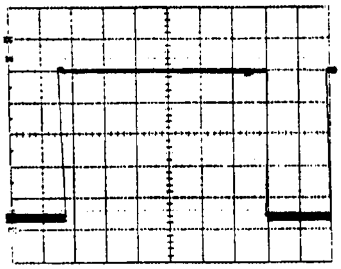
(27) **IC1804 pin 4**
V range : 1V/div.
H range : 5msec/div.



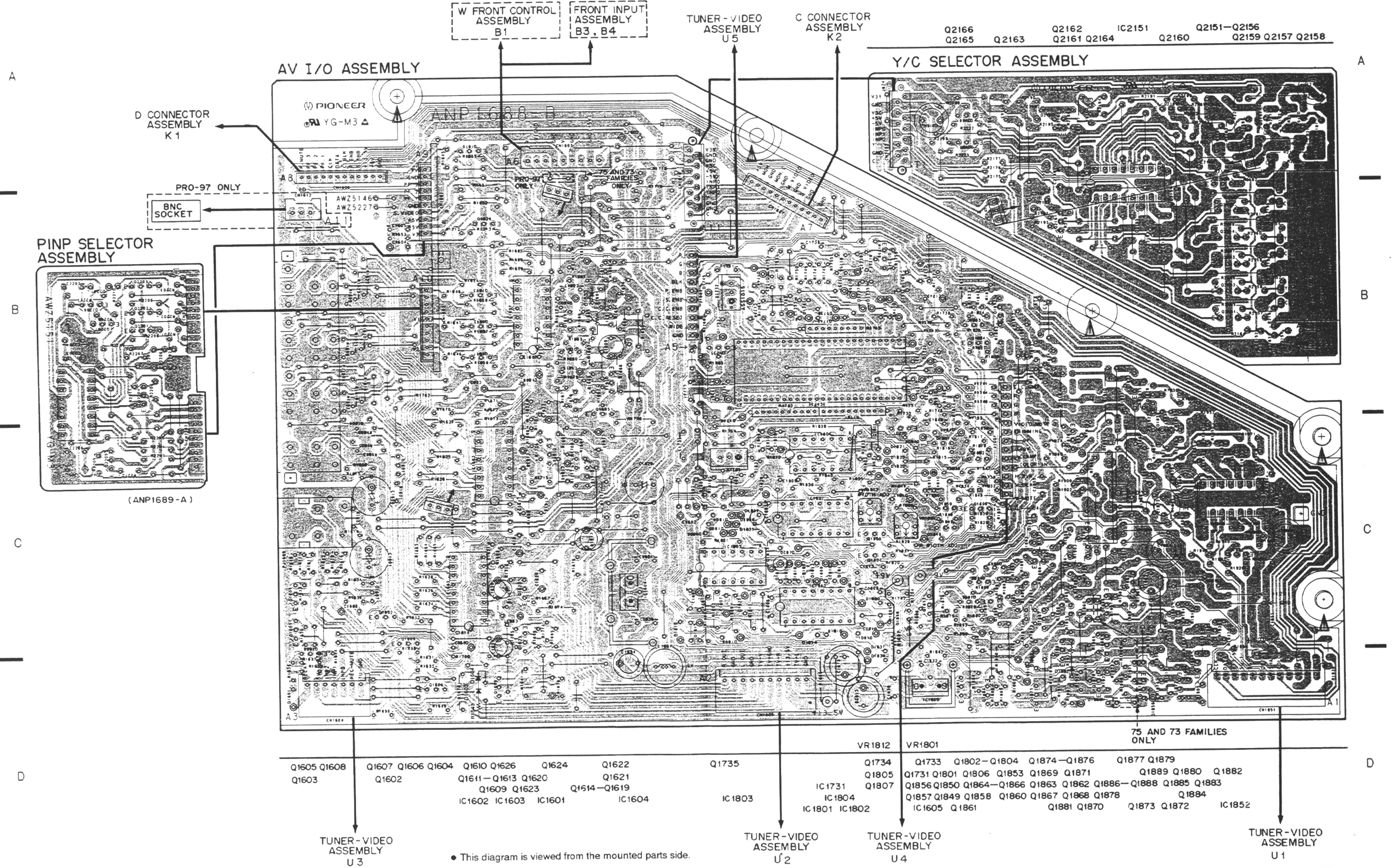
(28) **IC1804 pin 11**
V range : 1V/div.
H range : 5msec/div.



(29) **IC1804 pin 13**
V range : 1V/div.
H range : 2msec/div.



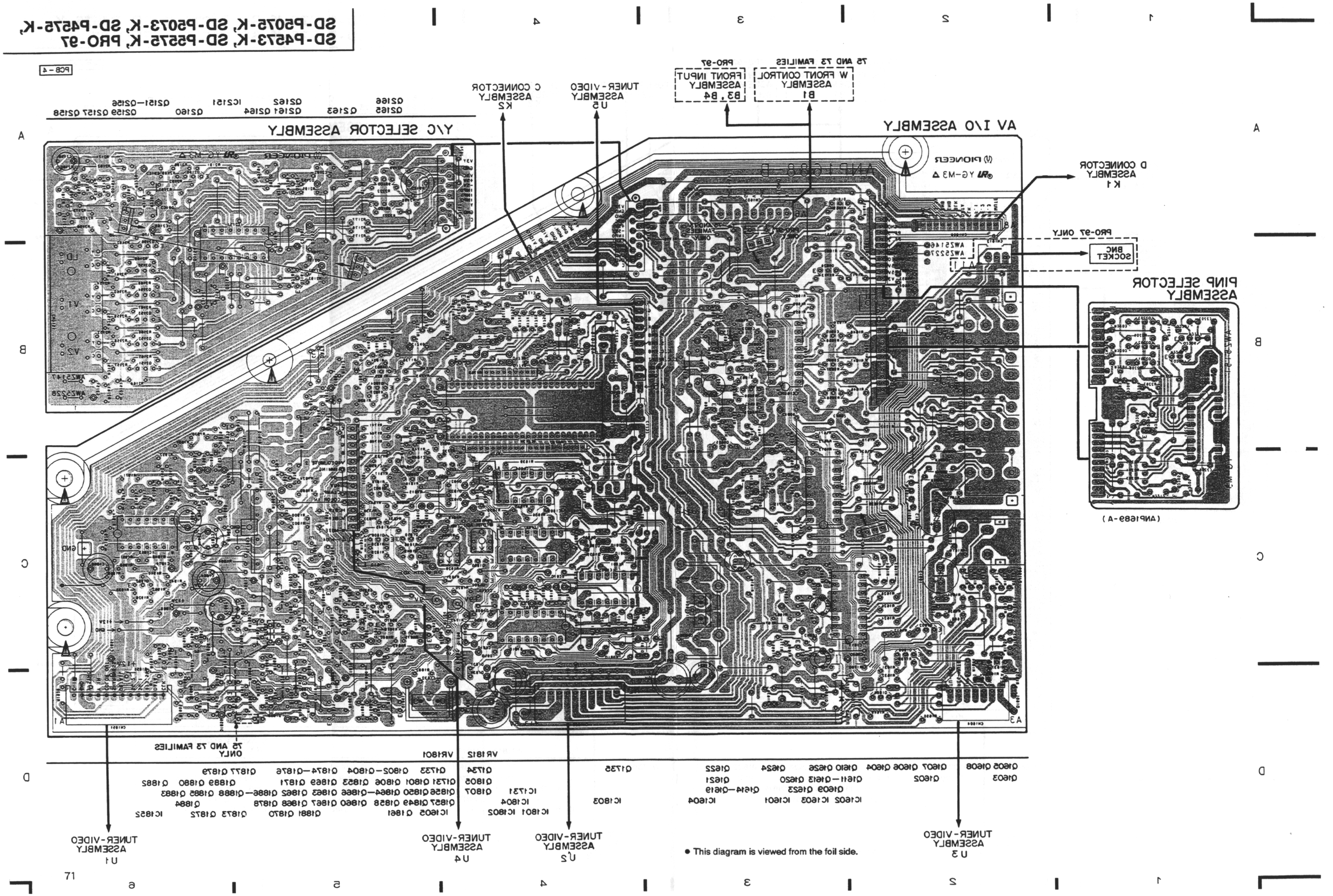
PCB-4


1
2
3
4
5
6
A
B
C
D
75 AND 73 FAMILIES
W FRONT CONTROL ASSEMBLY
B1
PRO-97
FRONT INPUT ASSEMBLY
B3, B4
TUNER-VIDEO ASSEMBLY
U5
C CONNECTOR ASSEMBLY
K2
Q2166
Q2165
Q2163
Q2162
Q2161 Q2164
IC2151
Q2160
Q2151—Q2156
Q2159 Q2157 Q2158
Y/C SELECTOR ASSEMBLY
AV I/O ASSEMBLY
PIONEER
YG-M3
ANP1688-B
D CONNECTOR ASSEMBLY
K1
PRO-97 ONLY
BNC SOCKET
AWZ5146
AWZ5227
PRO-97 ONLY
75 AND 73 FAMILIES ONLY
A6
A7
A8
A9
A10
A11
A5
A2
A3
A1
PINP SELECTOR ASSEMBLY
AWZ5151
(ANP1689-A)
+13.5V
75 AND 73 FAMILIES ONLY
VR1812
VR1801
Q1605 Q1608
Q1603
Q1607 Q1606 Q1604
Q1602
Q1610 Q1626
Q1611—Q1613 Q1620
Q1609 Q1623
IC1602 IC1603
Q1624
IC1601
Q1622
Q1621
Q1614—Q1619
IC1604
Q1735
IC1803
IC1731
IC1804
IC1801 IC1802
Q1734
Q1805
Q1807
Q1733 Q1802—Q1804 Q1874—Q1876
Q1731 Q1801 Q1806 Q1853 Q1869 Q1871
Q1856 Q1850 Q1864—Q1866 Q1863 Q1862 Q1886—Q1888
Q1857 Q1849 Q1858 Q1860 Q1867 Q1868 Q1878
IC1605 Q1861
Q1881 Q1870
Q1877 Q1879
Q1889 Q1880 Q1882
Q1885 Q1883
Q1884
Q1873 Q1872
IC1852
TUNER-VIDEO ASSEMBLY
U3
TUNER-VIDEO ASSEMBLY
U2
TUNER-VIDEO ASSEMBLY
U4
TUNER-VIDEO ASSEMBLY
U1

- This diagram is viewed from the mounted parts side.

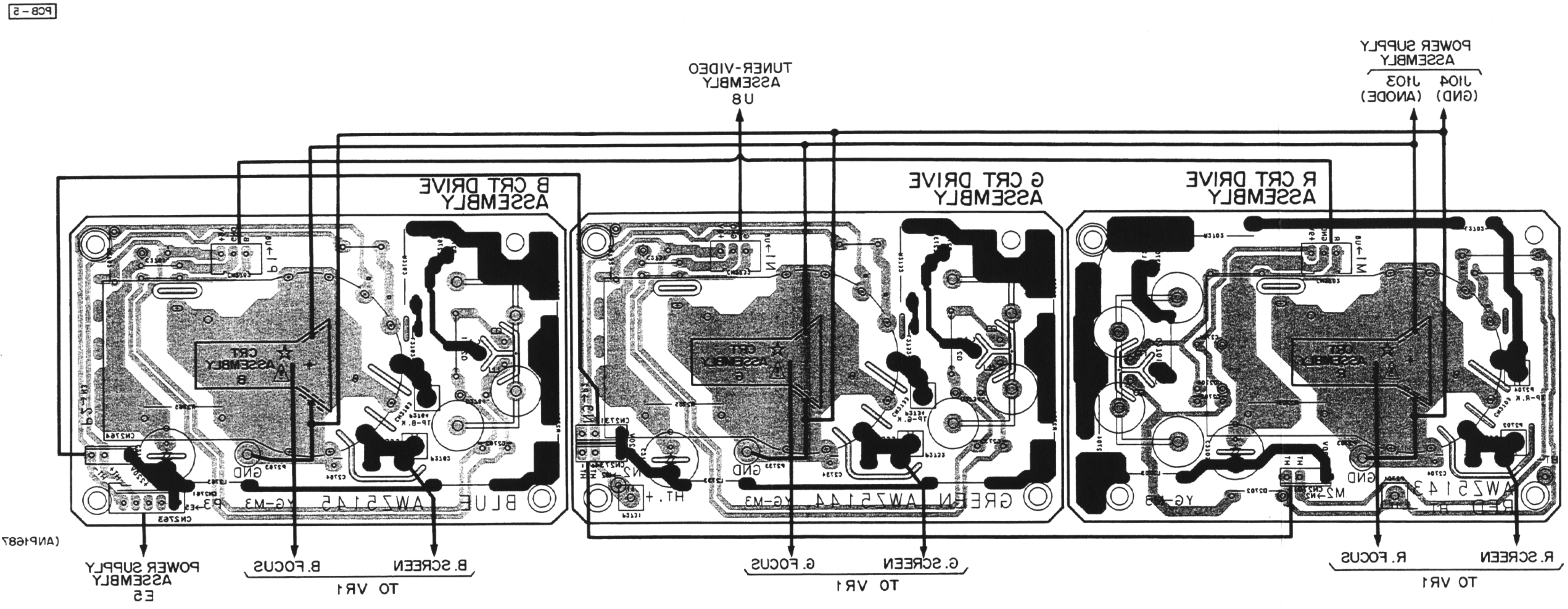
SD-P5075-K, SD-P5073-K, SD-P4575-K, SD-P4573-K, SD-P5575-K, PRO-97

PCB - 4


Y/C SELECTOR ASSEMBLY
Q2166 Q2165
Q2163
Q2162 Q2161 Q2164
IC2151 Q2160
Q2151—Q2156 Q2159 Q2157 Q2158
AV I/O ASSEMBLY
C CONNECTOR ASSEMBLY K2
TUNER-VIDEO ASSEMBLY U5
PRO-97 FRONT INPUT ASSEMBLY B3, B4
75 AND 73 FAMILIES W FRONT CONTROL ASSEMBLY B1
D CONNECTOR ASSEMBLY K1
PRO-97 ONLY
BNC SOCKET
PINP SELECTOR ASSEMBLY
(ANP1689-A)
GND
75 AND 73 FAMILIES ONLY
VR1801
VR1812
Q1733 Q1802—Q1804 Q1874—Q1876 Q1877 Q1879
Q1731 Q1801 Q1806 Q1853 Q1869 Q1871 Q1889 Q1880 Q1882
Q1856 Q1850 Q1864—Q1866 Q1863 Q1862 Q1886—Q1888 Q1885 Q1883
Q1857 Q1849 Q1858 Q1860 Q1867 Q1868 Q1878 Q1884
IC1605 Q1861 Q1881 Q1870 Q1873 Q1872 IC1852
Q1734
Q1805
Q1807 IC1731
IC1804
IC1801 IC1802
Q1735
IC1803
Q1622 Q1621 Q1614—Q1619 IC1604
Q1624
Q1610 Q1626 Q1611—Q1613 Q1620 Q1609 Q1623 IC1602 IC1603 IC1601
Q1607 Q1606 Q1604 Q1602
Q1605 Q1608 Q1603
TUNER-VIDEO ASSEMBLY U1
TUNER-VIDEO ASSEMBLY U4
TUNER-VIDEO ASSEMBLY U2
TUNER-VIDEO ASSEMBLY U3
A
B
C
D
1
2
3
4
5
6

- This diagram is viewed from the foil side.

5.13 R., G. AND B. CRT DRIVE ASSEMBLIES


PCB-5
TUNER-VIDEO ASSEMBLY U8
POWER SUPPLY ASSEMBLY
J104 (GND)
J103 (ANODE)
B CRT DRIVE ASSEMBLY
G CRT DRIVE ASSEMBLY
R CRT DRIVE ASSEMBLY
CRT ASSEMBLY B
CRT ASSEMBLY G
CRT ASSEMBLY R
BLUE AWZ5145 YG-M3
GREEN AWZ5144 YG-M3
RED AWZ5143 YG-M3
GND
HT.+
(ANP1687-B)
POWER SUPPLY ASSEMBLY E5
B.FOCUS
B.SCREEN
TO VR1
G.FOCUS
G.SCREEN
TO VR1
R.FOCUS
R.SCREEN
TO VR1

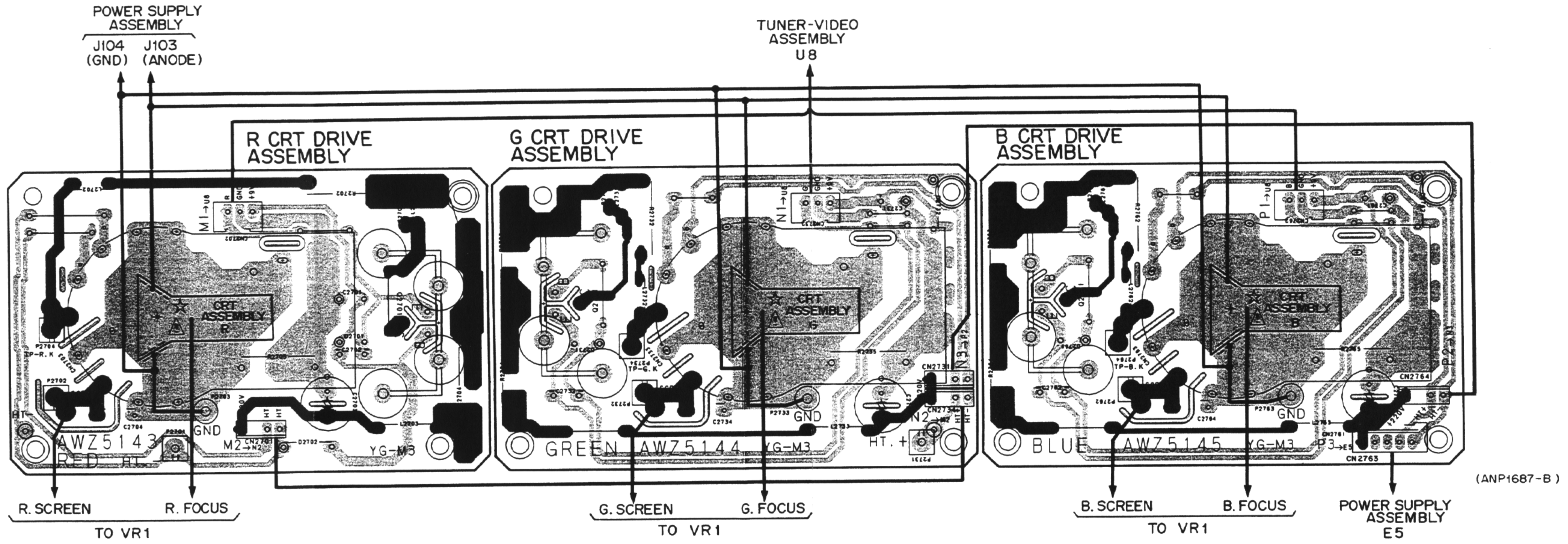
- This diagram is viewed from the foil side.

■ mark shows a high voltage generation point (excepting the charged section).

- Parts marked ☆ are important parts which relate to X-ray radiation.
If any of these parts need to be replaced. Always replace with specified parts.

5.13 R., G. AND B. CRT DRIVE ASSEMBLIES

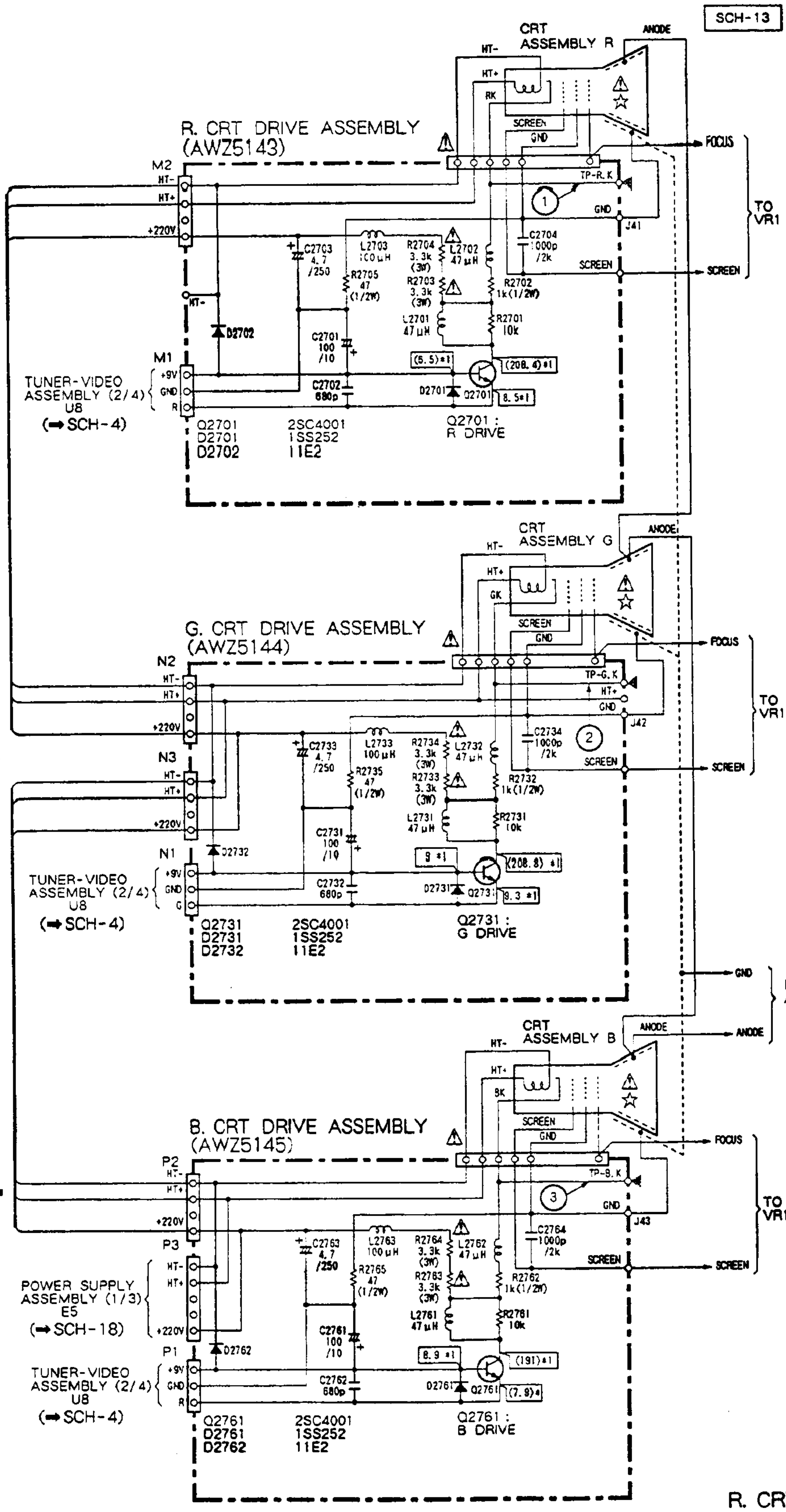
PCB-5


POWER SUPPLY ASSEMBLY
J104 (GND)
J103 (ANODE)
TUNER-VIDEO ASSEMBLY
U8
R CRT DRIVE ASSEMBLY
G CRT DRIVE ASSEMBLY
B CRT DRIVE ASSEMBLY
M1→U8
N1→U8
P1→U8
CRT ASSEMBLY R
CRT ASSEMBLY G
CRT ASSEMBLY B
TP-R.K
TP-G.K
TP-B.K
GND
M2→N2
N2→M2
N3→P2
P2→N3
P3→E5
HT
HT.+
CN2731
CN2764
CN2763
AWZ5143 RED
GREEN AWZ5144 YG-M3
BLUE AWZ5145 YG-M3
YG-M3
(ANP1687-B)
R. SCREEN
R. FOCUS
TO VR1
G. SCREEN
G. FOCUS
TO VR1
B. SCREEN
B. FOCUS
TO VR1
POWER SUPPLY ASSEMBLY
E5

■ mark shows a high voltage generation point (excepting the charged section).

- Parts marked ☆ are important parts which relate to X-ray radiation.
  If any of these parts need to replaced. Always replace with specified parts.

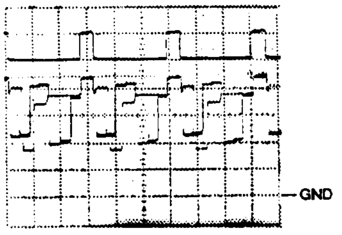
- This diagram is viewed from the mounted parts side.


SCH-13
A
B
C
D
CRT ASSEMBLY R
ANODE
HT-
HT+
RK
SCREEN
GND
R. CRT DRIVE ASSEMBLY
(AWZ5143)
M2
HT-
HT+
+220V
FOCUS
TP-R.K
GND
J41
TO VR1
SCREEN
①
C2703 4.7 /250
L2703 100μH
R2704 3.3k (3W)
L2702 47μH
C2704 1000p /2k
R2705 47 (1/2W)
R2703 3.3k (3W)
R2702 1k (1/2W)
L2701 47μH
R2701 10k
D2702
C2701 100 /10
M1
+9V
GND
R
TUNER-VIDEO ASSEMBLY (2/4) U8
(➡SCH-4)
(6.5)*1
(208.4)*1
C2702 680p
D2701
Q2701
8.5*1
Q2701 2SC4001
D2701 1SS252
D2702 11E2
Q2701 : R DRIVE
CRT ASSEMBLY G
ANODE
HT-
HT+
GK
SCREEN
GND
G. CRT DRIVE ASSEMBLY
(AWZ5144)
N2
HT-
HT+
+220V
FOCUS
TP-G.K
HT+
GND
J42
TO VR1
SCREEN
②
C2733 4.7 /250
L2733 100μH
R2734 3.3k (3W)
L2732 47μH
C2734 1000p /2k
R2735 47 (1/2W)
R2733 3.3k (3W)
R2732 1k (1/2W)
L2731 47μH
R2731 10k
N3
HT-
HT+
+220V
D2732
C2731 100 /10
N1
+9V
GND
G
TUNER-VIDEO ASSEMBLY (2/4) U8
(➡SCH-4)
9*1
(208.8)*1
C2732 680p
D2731
Q2731
8.3*1
Q2731 2SC4001
D2731 1SS252
D2732 11E2
Q2731 : G DRIVE
GND
ANODE
POWER SUPPLY ASSEMBLY (3/3)
(➡SCH-18)
CRT ASSEMBLY B
ANODE
HT-
HT+
BK
SCREEN
GND
B. CRT DRIVE ASSEMBLY
(AWZ5145)
P2
HT-
HT+
+220V
FOCUS
TP-B.K
GND
J43
TO VR1
SCREEN
③
C2763 4.7 /250
L2763 100μH
R2764 3.3k (3W)
L2762 47μH
C2764 1000p /2k
R2765 47 (1/2W)
R2763 3.3k (3W)
R2762 1k (1/2W)
L2761 47μH
R2761 10k
P3
HT-
HT+
+220V
POWER SUPPLY ASSEMBLY (1/3) E5
(➡SCH-18)
D2762
C2761 100 /10
P1
+9V
GND
B
TUNER-VIDEO ASSEMBLY (2/4) U8
(➡SCH-4)
8.9*1
(191)*1
C2762 680p
D2761
Q2761
(7.8)*
Q2761 2SC4001
D2761 1SS252
D2762 11E2
Q2761 : B DRIVE

- **Waveformes**
- Input signal : Color bar
- Picture quqlity : standard
- Range : DC range (without notice)

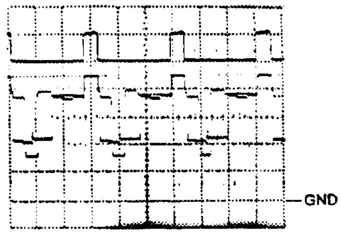
㉖ **Upper: U6 pin H. BLK**
(TUNER-VIDEO ASSEMBLY)
V range : 10V/div.
H range : 20 μsec/div.

① **Lower: TP-RK**
V range : 50V/div.
H range : 20 μsec/div.



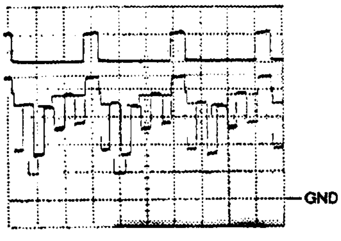
㉖ **Upper: U6 pin H. BLK**
(TUNER-VIDEO ASSEMBLY)
V range : 10V/div.
H range : 20 μsec/div.

② **Lower: TP-GK**
V range : 50V/div.
H range : 20 μsec/div.



㉖ **Upper: U6 pin H. BLK**
(TUNER-VIDEO ASSEMBLY)
V range : 10V/div.
H range : 20 μsec/div.

③ **Lower: TP-BK**
V range : 50V/div.
H range : 20 μsec/div.



*1 : DC voltage (V) is measured with the digital voltmeter at no input signal.
Value in ( ) is DC + AC mode.

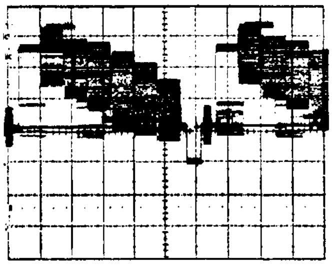
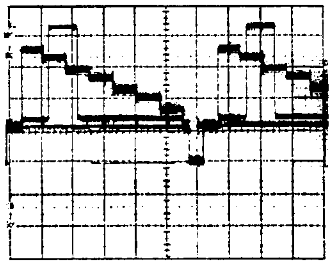
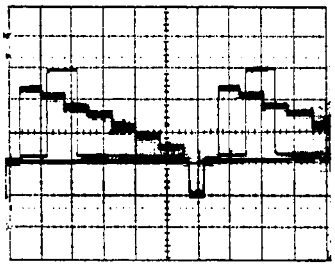
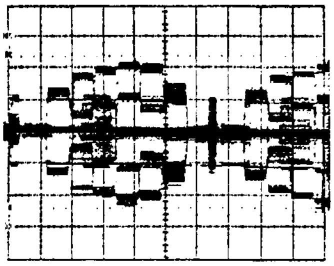
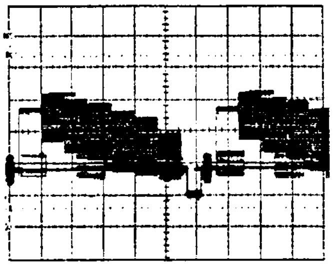
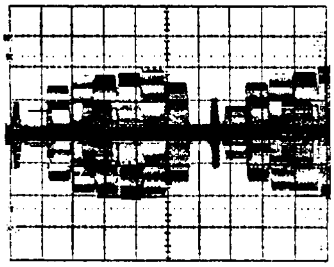
R. CRT DRIVE ASSY,
G. CRT DRIVE ASSY,
B. CRT DRIVE ASSY

SCH-13

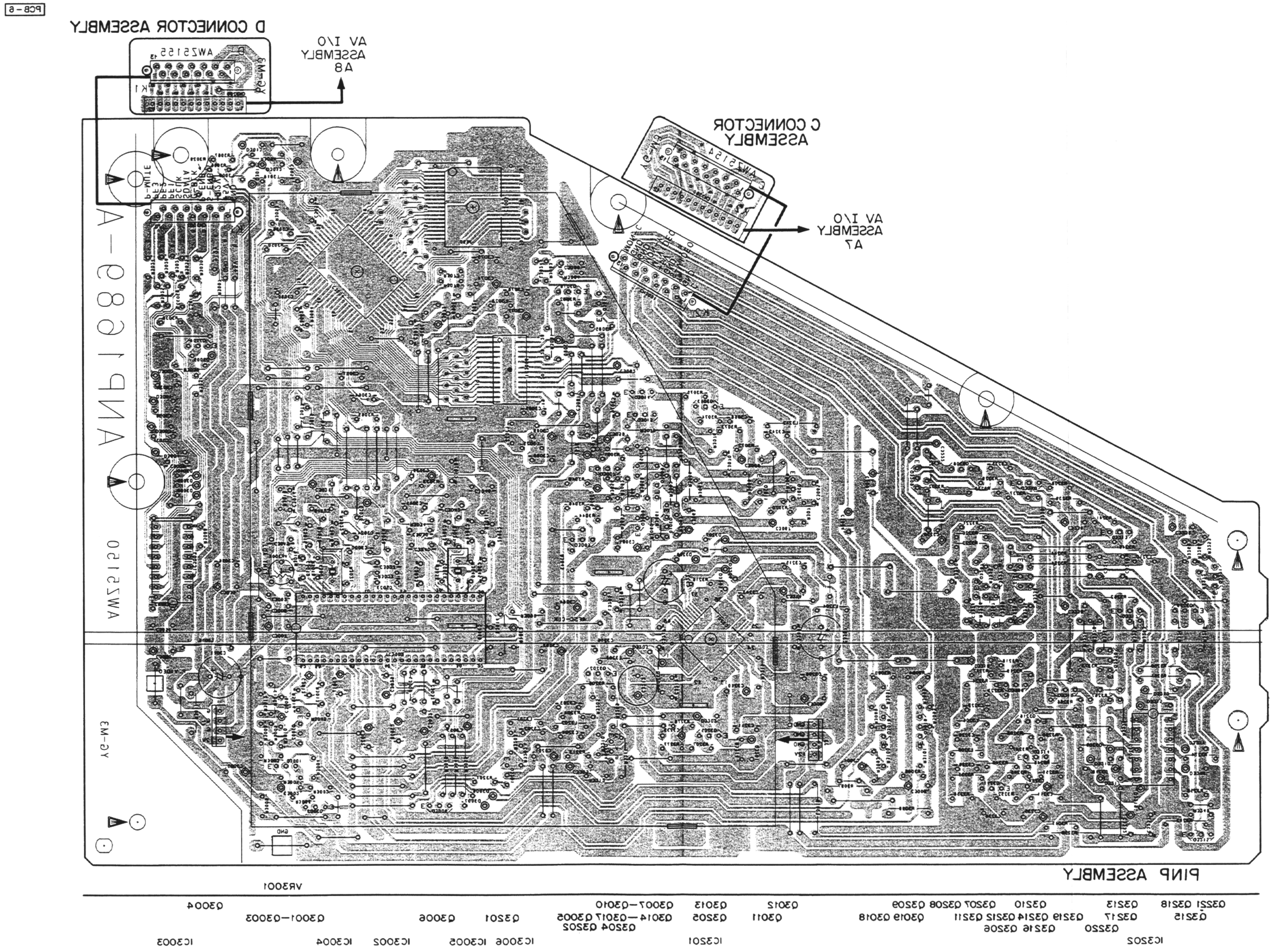
5.14 P IN P ASSEMBLY

- **Waveformes at P IN P assembly**

• Input signal : Color bar
• Picuture quality : standard
• DC range (Unless otherwise noted.)

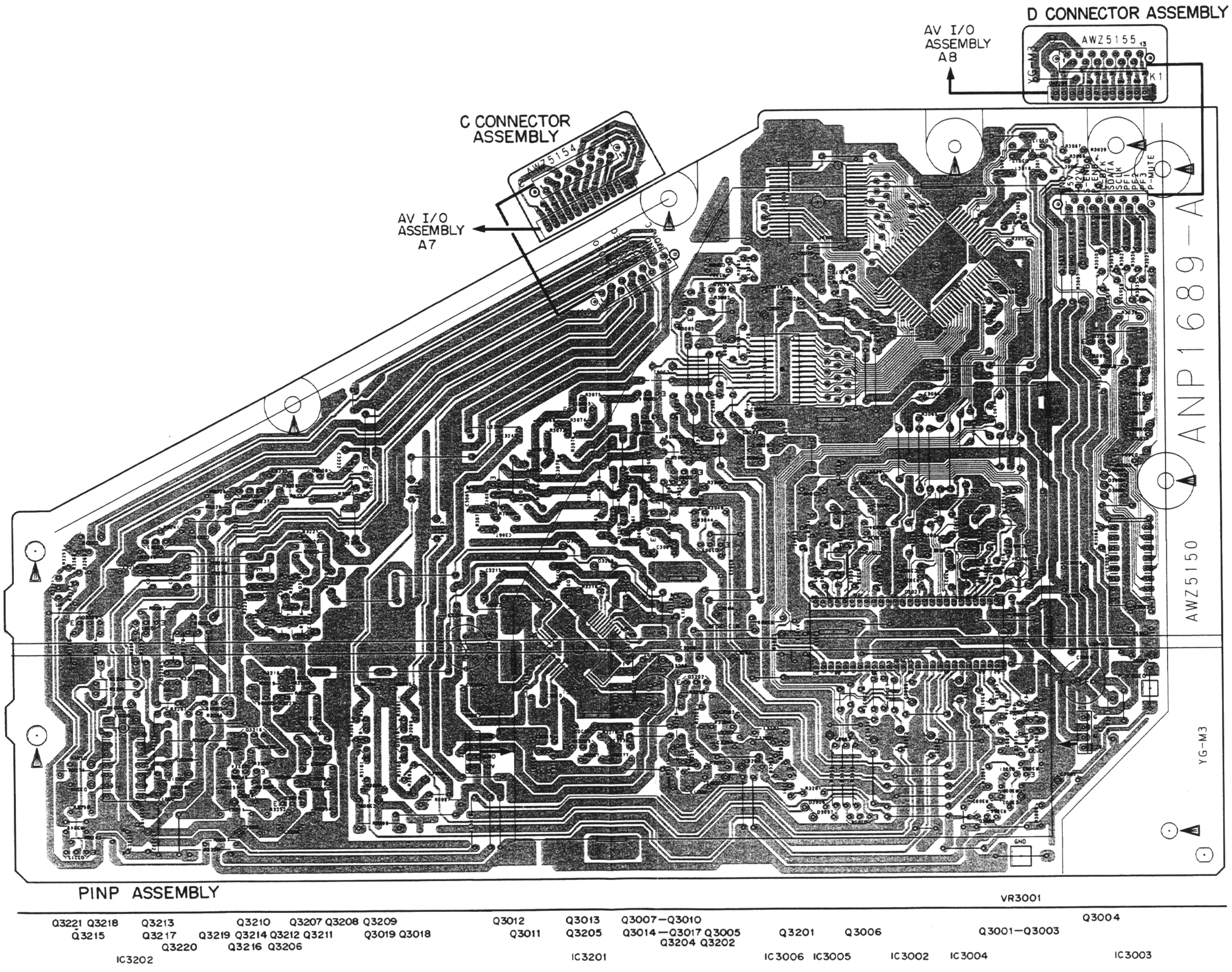
① **IC3201 pin 21** **(DCF IN)** V range : 500mV/div. H range : 10 μsec/div. 	③ **IC3201 pin 41** **(DCF Y OUT)** V range : 200mV/div. H range : 10 μsec/div. DC 0.6V 	⑤ **Q3219 Emitter** **(Y OUT)** V range : 500mV/div. H range : 10 μsec/div. DC 6.6V 
② **IC3201 pin 45** **(DCF C OUT)** V range : 100mV/div. H range : 10 μsec/div. 	④ **Q3003 Emitter** **(P. VIDEO)** V range : 500mV/div. H range : 10 μsec/div. DC 7.1V 	⑥ **Q3218 Emitter** **(C OUT)** V range : 50mV/div. H range : 10 μsec/div. DC 3.2V 

SD-P5075-K, SD-P5073-K, SD-P4575-K, SD-P4573-K, SD-P5575-K, PRO-97

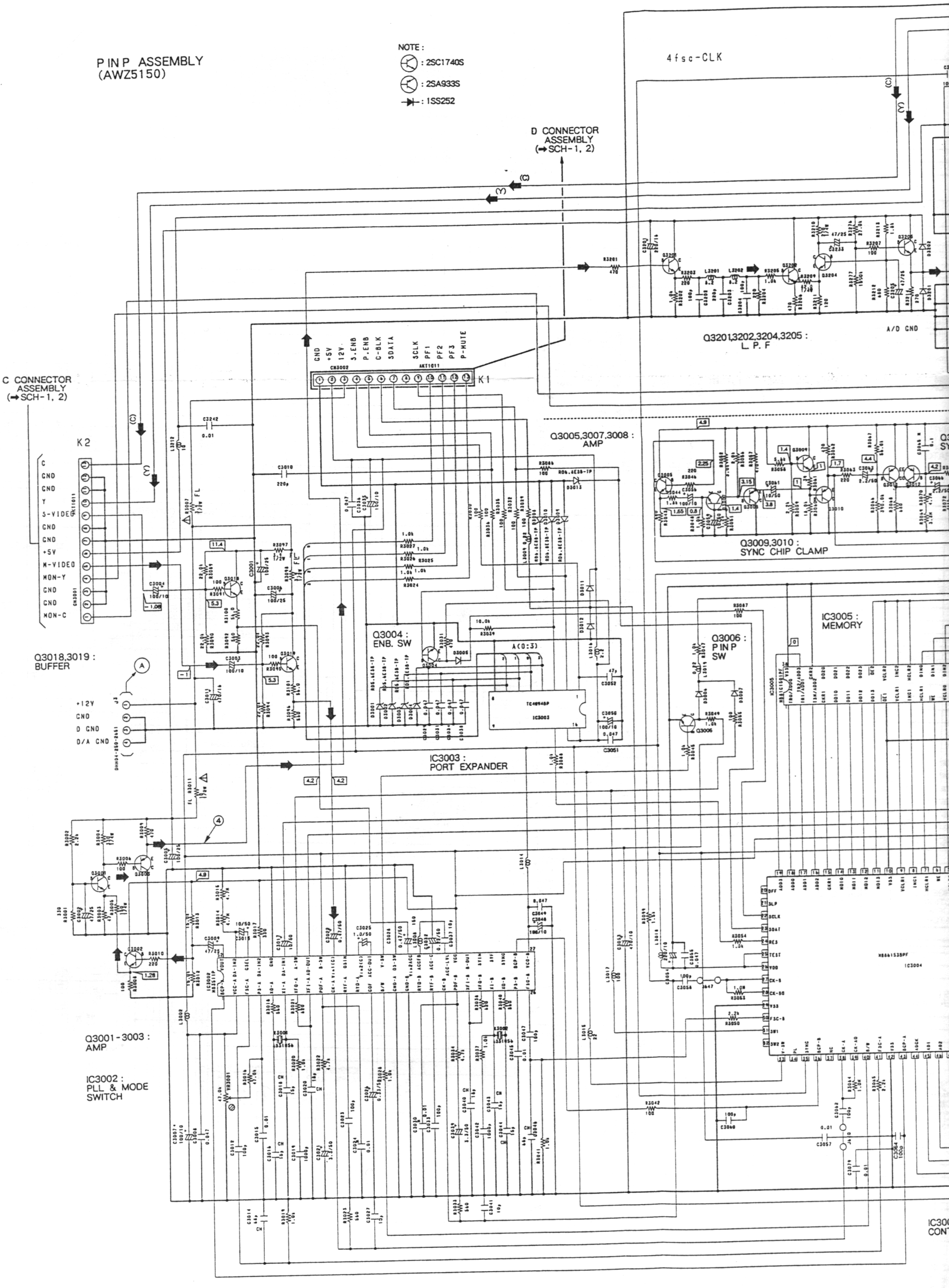

PCB-6
D CONNECTOR ASSEMBLY
AWZ5155
AV I/O ASSEMBLY A8
C CONNECTOR ASSEMBLY
AWZ5154
AV I/O ASSEMBLY A7
ANP1689-A
AWZ5150
EM-9Y
GND
PINP ASSEMBLY
VR3001
Q3221 Q3218
Q3215
Q3213
Q3217
Q3220
Q3210
Q3219 Q3214 Q3212 Q3211
Q3216 Q3206
Q3207 Q3208 Q3209
Q3019 Q3018
Q3012
Q3011
Q3013
Q3205
Q3007—Q3010
Q3014—Q3017 Q3005
Q3204 Q3202
Q3201
Q3006
Q3001—Q3003
Q3004
IC3202
IC3201
IC3006 IC3005
IC3002
IC3004
IC3003

- This diagram is viewed from the foil side.

PCB–6

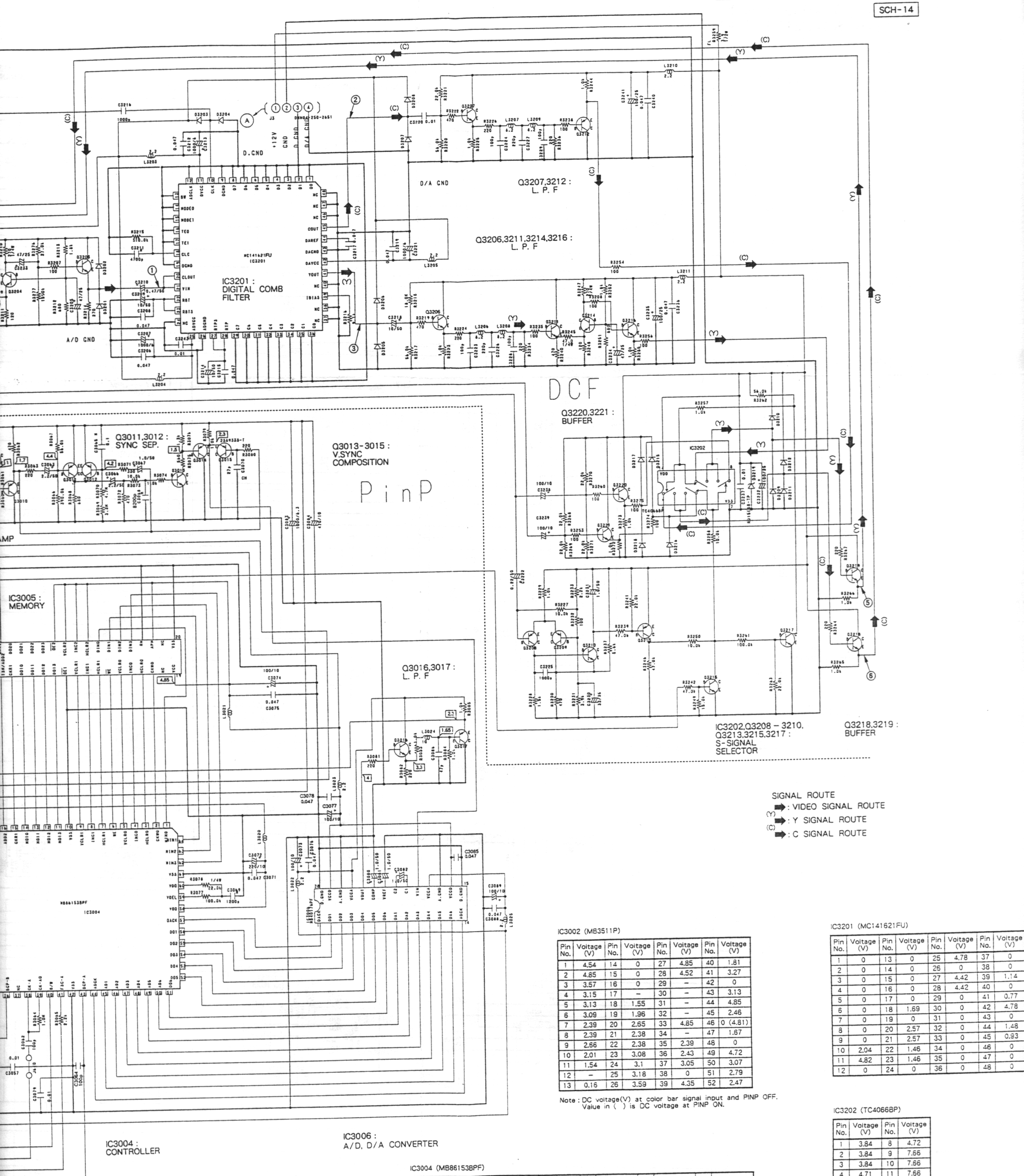

D CONNECTOR ASSEMBLY
AWZ5155
YG-M3
K1
AV I/O
ASSEMBLY
A8
C CONNECTOR
ASSEMBLY
AWZ5154
AV I/O
ASSEMBLY
A7
ANP1689-A
AWZ5150
YG-M3
P-MUTE
GND
PINP ASSEMBLY
VR3001
Q3221 Q3218
Q3215
Q3213
Q3217
Q3220
IC3202
Q3219 Q3214 Q3212 Q3211
Q3216 Q3206
Q3210
Q3207 Q3208 Q3209
Q3019 Q3018
Q3012
Q3011
Q3013
Q3205
IC3201
Q3007–Q3010
Q3014–Q3017 Q3005
Q3204 Q3202
Q3201
IC3006 IC3005
Q3006
IC3002
IC3004
Q3001–Q3003
Q3004
IC3003
A
B
C
D
1
2
3
4
5
6

- This diagram is viewed from the mounted parts side.


1
2
3
4
A
B
C
D
E
F
P IN P ASSEMBLY
(AWZ5150)
NOTE :
: 2SC1740S
: 2SA933S
: 1SS252
D CONNECTOR ASSEMBLY
(➡SCH-1, 2)
4fsc-CLK
C CONNECTOR ASSEMBLY
(➡SCH-1, 2)
K1
K2
GND
+5V
12V
S.ENB
P.ENB
C-BLK
SDATA
SCLK
PF1
PF2
PF3
P-MUTE
CN3002
AKT1011
C
GND
GND
Y
S-VIDEO
GND
GND
+5V
M-VIDEO
MON-Y
GND
GND
MON-C
CN3001
Q3201,3202,3204,3205 :
L.P.F
A/D GND
Q3005,3007,3008 :
AMP
Q3009,3010 :
SYNC CHIP CLAMP
Q3018,3019 :
BUFFER
Q3004 :
ENB. SW
A(0:3)
TC4094BP
IC3003
IC3003 :
PORT EXPANDER
Q3006 :
P IN P
SW
IC3005 :
MEMORY
+12V
GND
D GND
D/A GND
Q3001-3003 :
AMP
IC3002 :
PLL & MODE
SWITCH
M66153BPF
IC3004
IC300
CONT

IC3003 (TC4094BP)

Pin No.	Voltage (V)	Pin No.	Volt (V
1	0	9	–
2	–	10	–
3	0	11	–
4	4.79	12	–
5	0	13	–
6	0	14	4.
7	0	15	4.
8	0	16	4.


IC3201 :
DIGITAL COMB
FILTER
MC141621FU
Q3207,3212 :
L. P. F
Q3206,3211,3214,3216 :
L. P. F
DCF
Q3220,3221 :
BUFFER
IC3202
Q3011,3012 :
SYNC SEP.
Q3013-3015 :
V.SYNC
COMPOSITION
PinP
IC3005 :
MEMORY
Q3016,3017 :
L. P. F
IC3202,Q3208 - 3210,
Q3213,3215,3217 :
S-SIGNAL
SELECTOR
Q3218,3219 :
BUFFER
MB86153BPF
IC3004
IC3004 :
CONTROLLER
IC3006 :
A/D, D/A CONVERTER
A/D GND
D/A GND
D.GND
J3
+12V
GND
SIGNAL ROUTE
➡ : VIDEO SIGNAL ROUTE
(Y) ➡ : Y SIGNAL ROUTE
(C) ➡ : C SIGNAL ROUTE

IC3002 (MB3511P)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	4.54	14	0	27	4.85	40	1.81
2	4.85	15	0	28	4.52	41	3.27
3	3.57	16	0	29	–	42	0
4	3.15	17	–	30	–	43	3.13
5	3.13	18	1.55	31	–	44	4.85
6	3.09	19	1.96	32	–	45	2.46
7	2.39	20	2.65	33	4.85	46	0 (4.81)
8	2.39	21	2.38	34	–	47	1.67
9	2.66	22	2.38	35	2.39	48	0
10	2.01	23	3.08	36	2.43	49	4.72
11	1.54	24	3.1	37	3.05	50	3.07
12	–	25	3.18	38	0	51	2.79
13	0.16	26	3.59	39	4.35	52	2.47

Note : DC voltage(V) at color bar signal input and PINP OFF.
Value in ( ) is DC voltage at PINP ON.

IC3201 (MC141621FU)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	13	0	25	4.78	37	0
2	0	14	0	26	0	38	0
3	0	15	0	27	4.42	39	1.14
4	0	16	0	28	4.42	40	0
5	0	17	0	29	0	41	0.77
6	0	18	1.69	30	0	42	4.78
7	0	19	0	31	0	43	0
8	0	20	2.57	32	0	44	1.48
9	0	21	2.57	33	0	45	0.93
10	2.04	22	1.46	34	0	46	0
11	4.82	23	1.46	35	0	47	0
12	0	24	0	36	0	48	0

IC3202 (TC4066BP)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	3.84	8	4.72
2	3.84	9	7.66
3	3.84	10	7.66
4	4.71	11	7.66
5	0	12	10.87
6	0	13	10.87
7	0	14	10.93

IC3004 (MB86153BPF)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	1.7	12	2.19 (0.15)	23	–	34	–	45	1.46	56	0 (0.15)
2	2.27	13	1.84 (4)	24	4.85	35	2.47	46	1.65	57	1.77
3	0	14	2.13 (3.3)	25	4.85	36	4.53	47	1.99	58	4.85
4	0	15	1.7 (0.18)	26	4.85	37	–	48	2.01	59	0
5	0	16	2.36 (0.53)	27	2.15	38	2.16	49	1.68	60	0
6	0 (4.29)	17	2.41 (0.53)	28	2.15	39	2.12	50	1.7	61	0
7	0	18	2.71 (0.53)	29	0	40	0	51	0 (0.14)	62	2.36
8	0	19	2.44 (1.99)	30	1.78	41	1.77	52	0 (0.16)	63	1.88
9	0	20	–	31	0	42	0	53	0 (0.19)	64	1.8
10	0	21	–	32	–	43	4.54	54	0 (0.17)		
11	0 (4.06)	22	0 (4.12)	33	4.35	44	1.51	55	0 (4.25)		

Note : DC voltage(V) at color bar signal input and PINP OFF.
Value in ( ) is DC voltage at PINP ON.

IC3003 (TC4094BP)

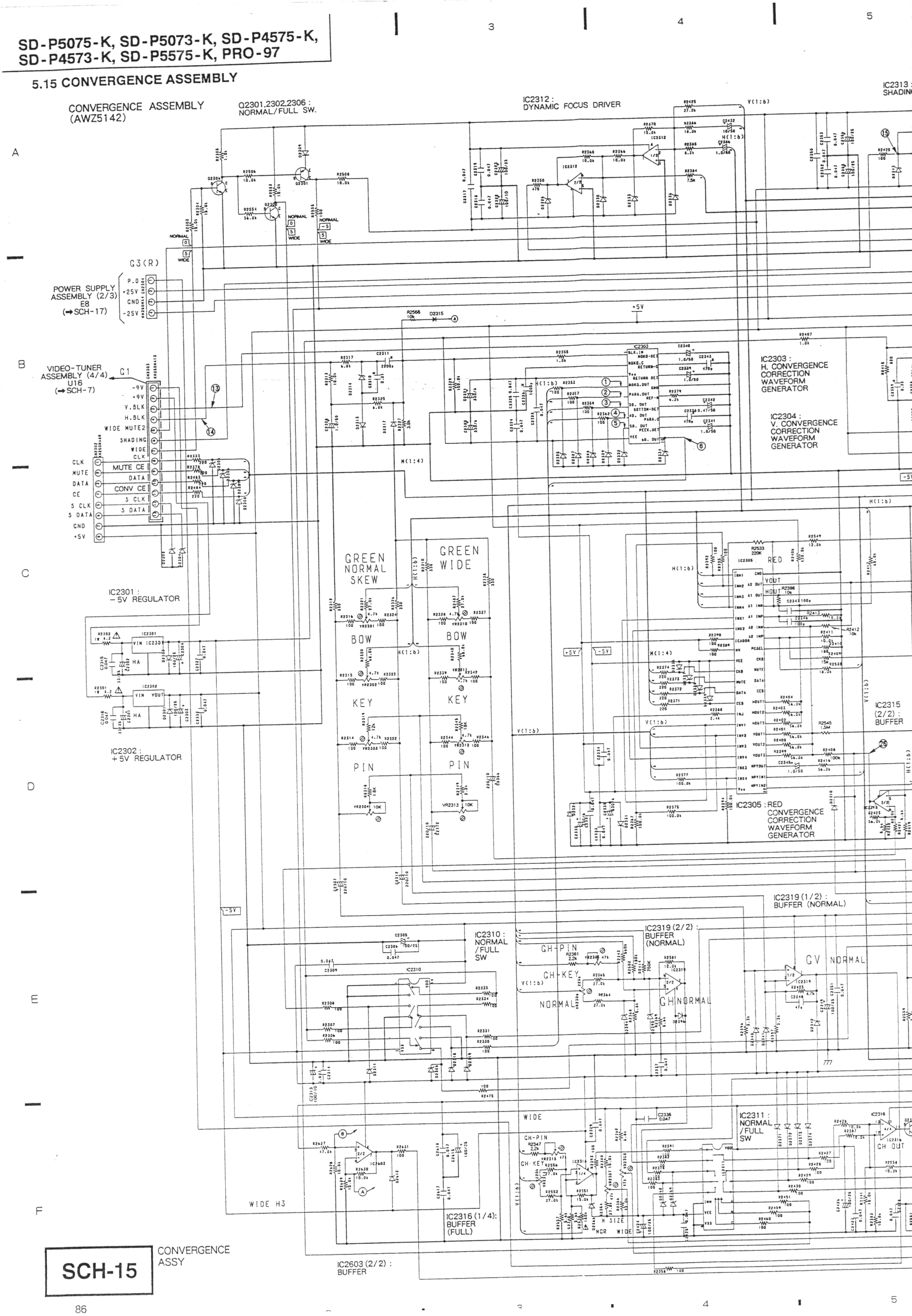
Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	9	–
2	–	10	–
3	0	11	–
4	4.79	12	–
5	0	13	–
6	0	14	4.85
7	0	15	4.85
8	0	16	4.85

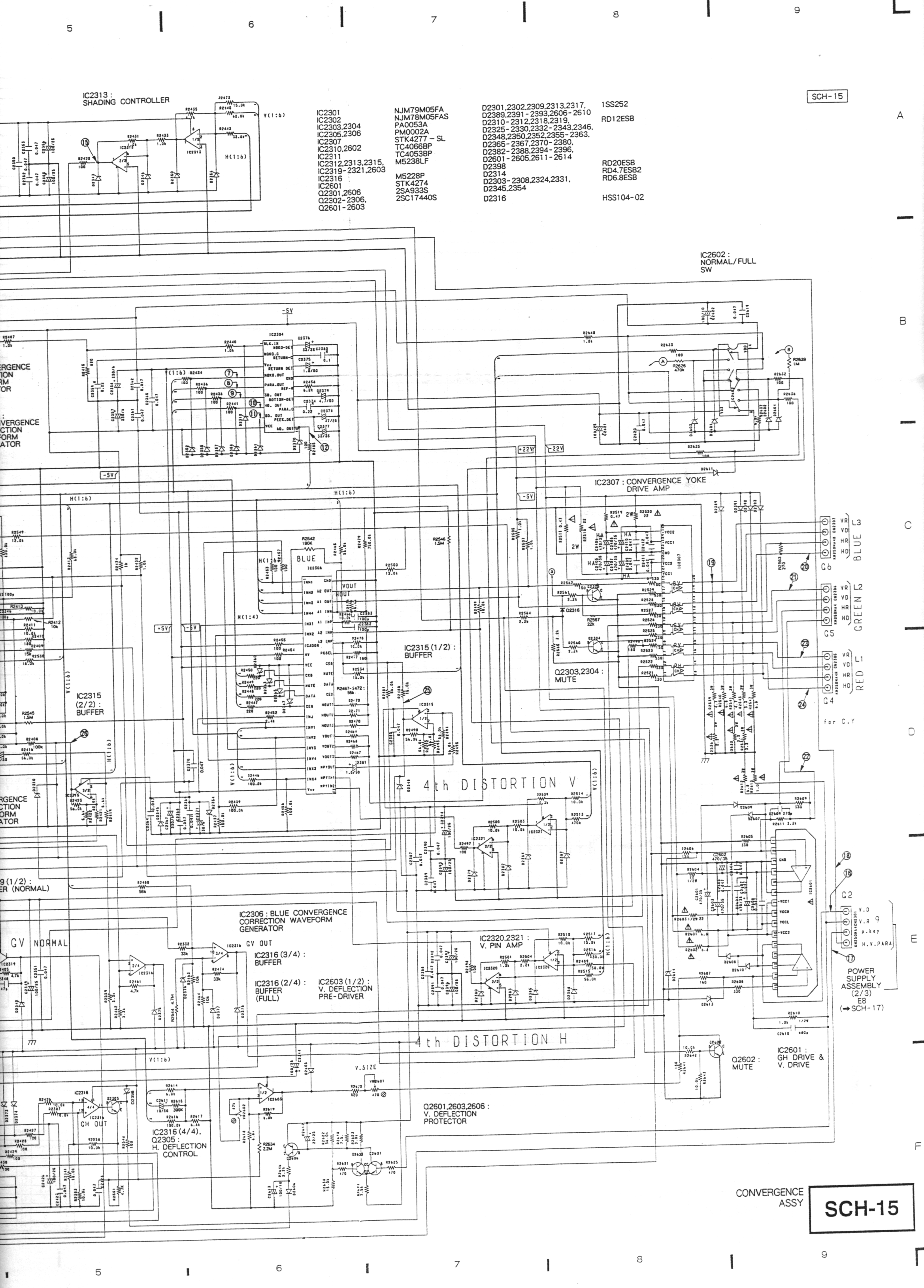
IC3006 (MB40176PF)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	1.77	8	1.7	15	0	22	3.89
2	0 (0.15)	9	1.68	16	4.84	23	2.71
3	0 (4.25)	10	2.01	17	0	24	3.89
4	0 (0.17)	11	1.99	18	4.83	25	4.83
5	0 (0.19)	12	1.65	19	2.45	26	0
6	0 (0.16)	13	1.46	20	3.05	27	4.84
7	0 (0.14)	14	1.51	21	4.21	28	0

Note : DC voltage(V) at color bar signal input and PINP OFF.
Value in ( ) is DC voltage at PINP ON.

5.15 CONVERGENCE ASSEMBLY

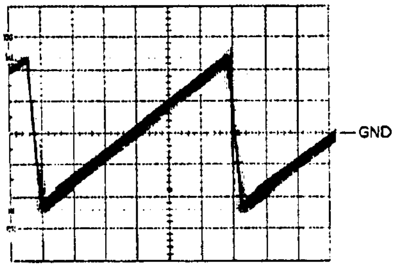

3
4
5
A
B
C
D
E
F
CONVERGENCE ASSEMBLY (AWZ5142)
Q2301,2302,2306 : NORMAL/FULL SW.
IC2312 : DYNAMIC FOCUS DRIVER
IC2313 : SHADING
NORMAL
WIDE
G3(R)
POWER SUPPLY ASSEMBLY (2/3) E8 (→SCH-17)
P.D
+25V
GND
-25V
+5V
VIDEO-TUNER ASSEMBLY (4/4) U16 (→SCH-7)
G1
-9V
+9V
V.BLK
H.BLK
WIDE MUTE2
SHADING
WIDE
CLK
MUTE CE
DATA
CONV CE
S CLK
S DATA
CLK
MUTE
DATA
CE
S CLK
S DATA
GND
+5V
IC2303 : H. CONVERGENCE CORRECTION WAVEFORM GENERATOR
IC2304 : V. CONVERGENCE CORRECTION WAVEFORM GENERATOR
IC2301 : −5V REGULATOR
IC2302 : +5V REGULATOR
GREEN NORMAL SKEW
GREEN WIDE
BOW
KEY
PIN
H(1:6)
V(1:6)
M(1:4)
RED
IC2305 : RED CONVERGENCE CORRECTION WAVEFORM GENERATOR
IC2315 (2/2) : BUFFER
IC2319 (1/2) : BUFFER (NORMAL)
IC2319 (2/2) : BUFFER (NORMAL)
IC2310 : NORMAL /FULL SW
GH-PIN
GH-KEY
NORMAL
GH NORMAL
GV NORMAL
WIDE
CH-PIN
CH-KEY
H SIZE
NOR
WIDE H3
IC2311 : NORMAL /FULL SW
CH OUT
IC2316 (1/4): BUFFER (FULL)
IC2603 (2/2) : BUFFER
-5V
+5V



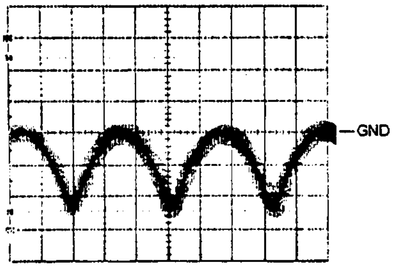
● Waveformes at CONVERGENCE assembly

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

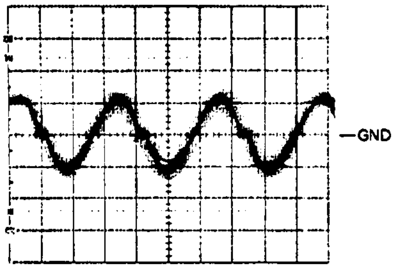
① **IC2303 pin 4**
(H 1)
V range : 0.5V/div.
H range : 10 μsec/div.



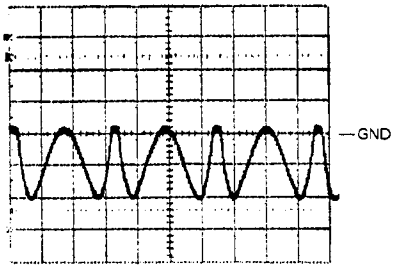
② **IC2303 pin 5**
(H 2)
V range : 1V/div.
H range : 20 μsec/div.



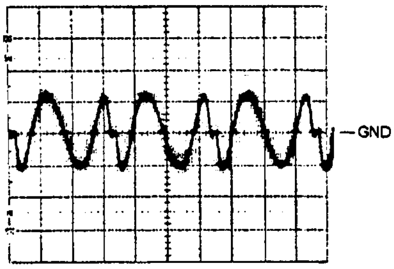
③ **IC2303 pin 6**
(H 3)
V range : 1V/div.
H range : 20 μsec/div.



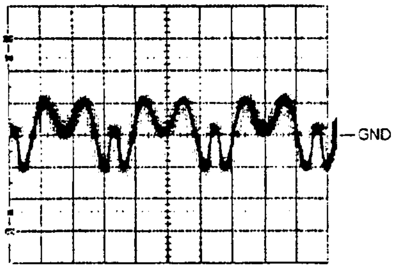
④ **IC2303 pin 7**
(H 4)
V range : 1V/div.
H range : 20 μsec/div.



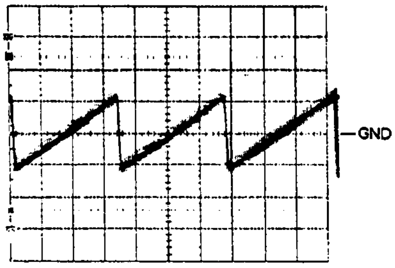
⑤ **IC2303 pin 8**
(H 5)
V range : 1V/div.
H range : 20 μsec/div.



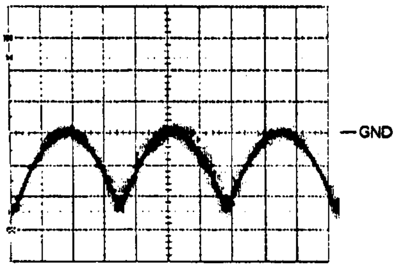
⑥ **IC2303 pin 10**
(H 6)
V range : 1V/div.
H range : 20 μsec/div.



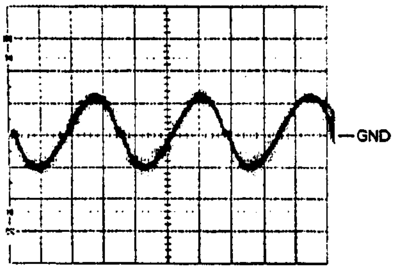
⑦ **IC2304 pin 4**
(V 1)
V range : 1V/div.
H range : 5msec/div.



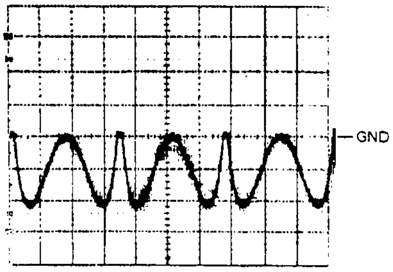
⑧ **IC2304 pin 5**
(V 2)
V range : 1V/div.
H range : 5msec/div.



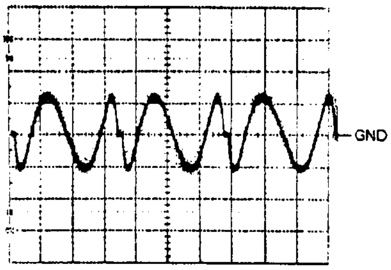
⑨ **IC2303 pin 6**
(V 3)
V range : 1V/div.
H range : 5msec/div.



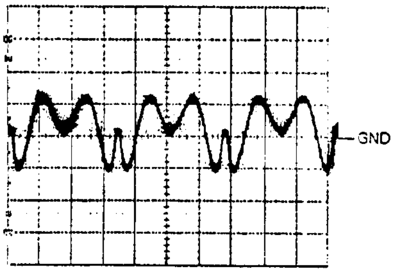
⑩ **IC2303 pin 7**
(V 4)
V range : 1V/div.
H range : 5msec/div.



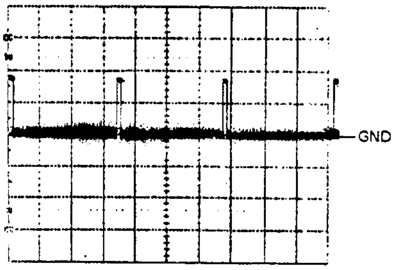
⑪ **IC2303 pin 8**
(V 5)
V range : 1V/div.
H range : 5msec/div.



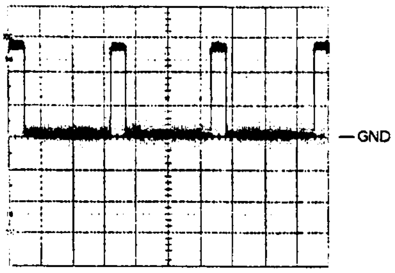
⑫ **IC2303 pin 10**
(V 6)
V range : 1V/div.
H range : 5msec/div.



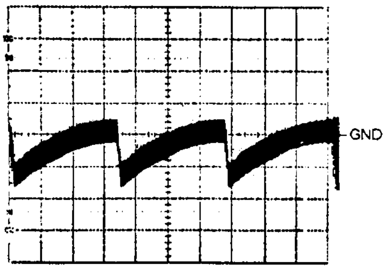
⑬ **G1 pin 3**
(V. BLK)
V range : 5V/div.
H range : 5msec/div.



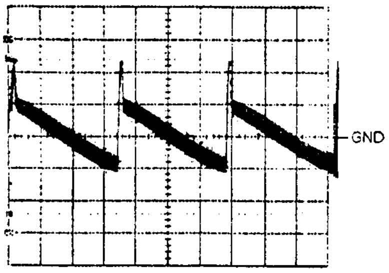
⑭ **G1 pin 4**
(H. BLK)
V range : 5V/div.
H range : 20 μsec/div.



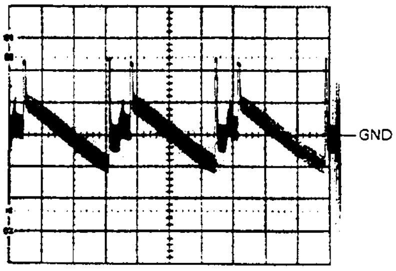
⑮ **IC2313 pin 7**
(SHADING)
V range : 0.5V/div.
H range : 5msec/div.



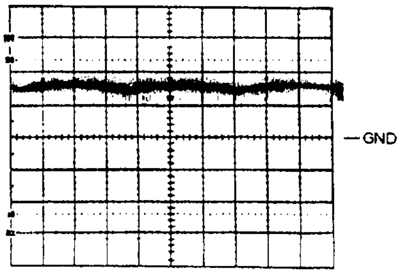
⑯-1 **G2 pin 1**
(V. D NORMAL)
V range :10V/div.
H range : 5msec/div.



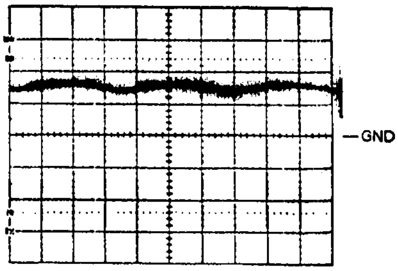
⑯-2 **G2 pin 1**
(V. D WIDE)
V range :10V/div.
H range : 5msec/div.



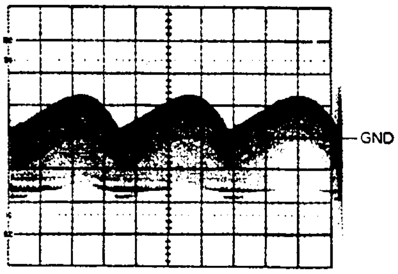
⑰-1 **G2 pin 3**
(P. KEY NORMAL)
V range :5V/div.
H range : 5msec/div.



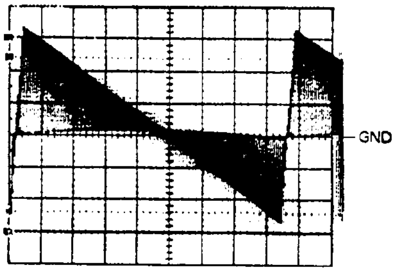
⑰-2 **G2 pin 3**
(P. KEY WIDE)
V range :5V/div.
H range : 5msec/div.



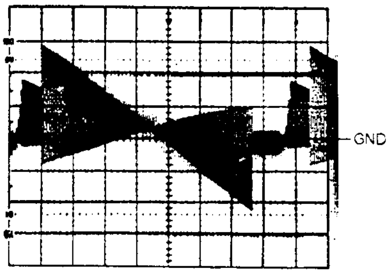
⑱ **G2 pin 4**
(H. V. PARA)
V range : 2V/div.
H range : 5msec/div.



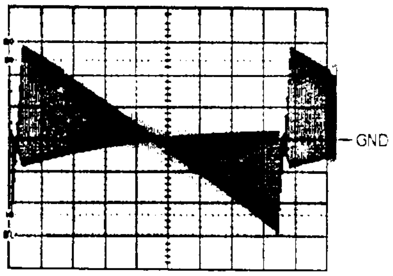
⑲-1 **G6 pin 1**
(BLUE V. R NORMAL)
V range : 2V/div.
H range : 2msec/div.



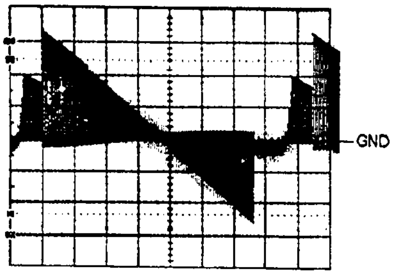
⑲-2 **G6 pin 1**
(BLUE V. R WIDE)
V range : 2V/div.
H range : 2msec/div.



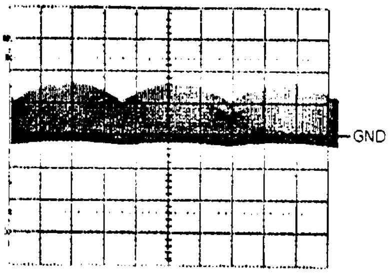
㉑-2 **G5 pin 1**
(GREEN V. R WIDE)
V range : 2V/div.
H range : 2msec/div.



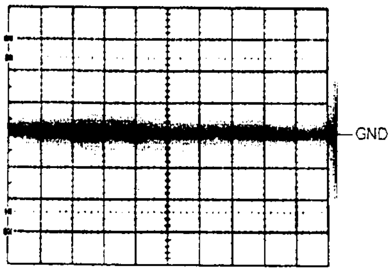
㉓-2 **G4 pin 1**
(RED V. R WIDE)
V range : 2V/div.
H range : 2msec/div.



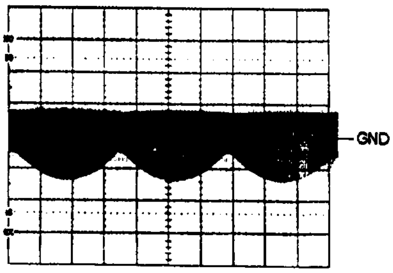
⑳-1 **G6 pin 4**
(BLUE H. R NORMAL)
V range : 2V/div.
H range : 5msec/div.



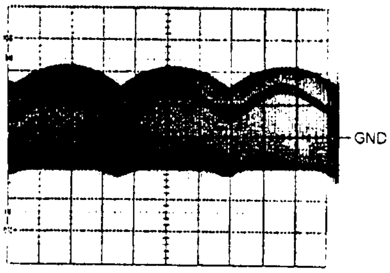
㉒-1 **G5 pin 3**
(GREEN H. R NORMAL)
V range : 2V/div.
H range : 5msec/div.



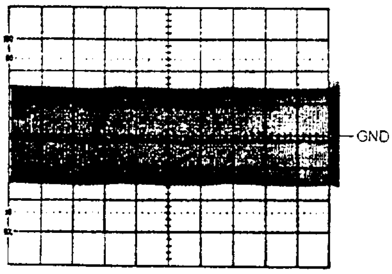
㉔-1 **G4 pin 4**
(RED H. R NORMAL)
V range : 2V/div.
H range : 5msec/div.



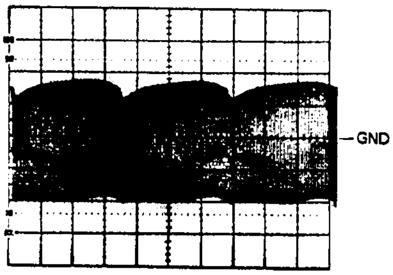
⑳-2 **G6 pin 4**
(BLUE H. R WIDE)
V range : 2V/div.
H range : 5msec/div.



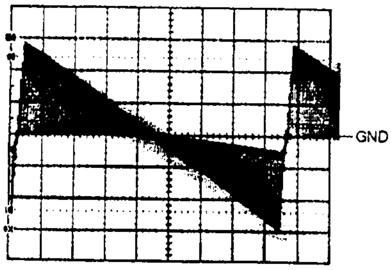
㉒-2 **G5 pin 3**
(GREEN H. R WIDE)
V range : 2V/div.
H range : 5msec/div.



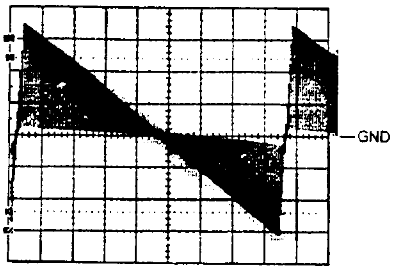
㉔-2 **G4 pin 4**
(RED H. R WIDE)
V range : 2V/div.
H range : 5msec/div.



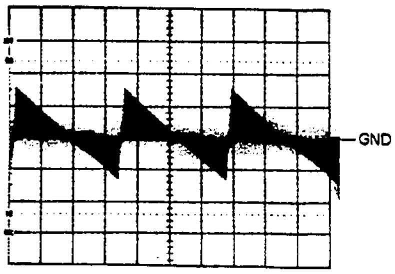
㉑-1 **G5 pin 1**
(GREEN V. R NORMAL)
V range : 2V/div.
H range : 2msec/div.



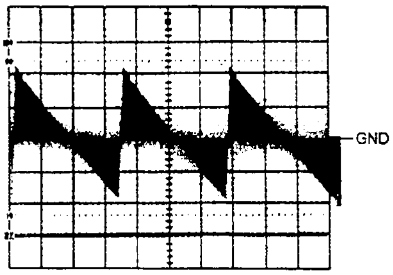
㉓-1 **G4 pin 1**
(RED V. R NORMAL)
V range : 2V/div.
H range : 2msec/div.



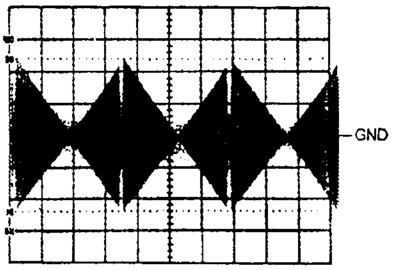
㉕-1 **IC2315 pin 1**
(V. PIN) at NORMAL
V range : 0.5V/div.
H range : 5msec/div.



㉕-2 **IC2315 pin 1**
(V. PIN) at WIDE
V range : 0.5V/div.
H range : 5msec/div.

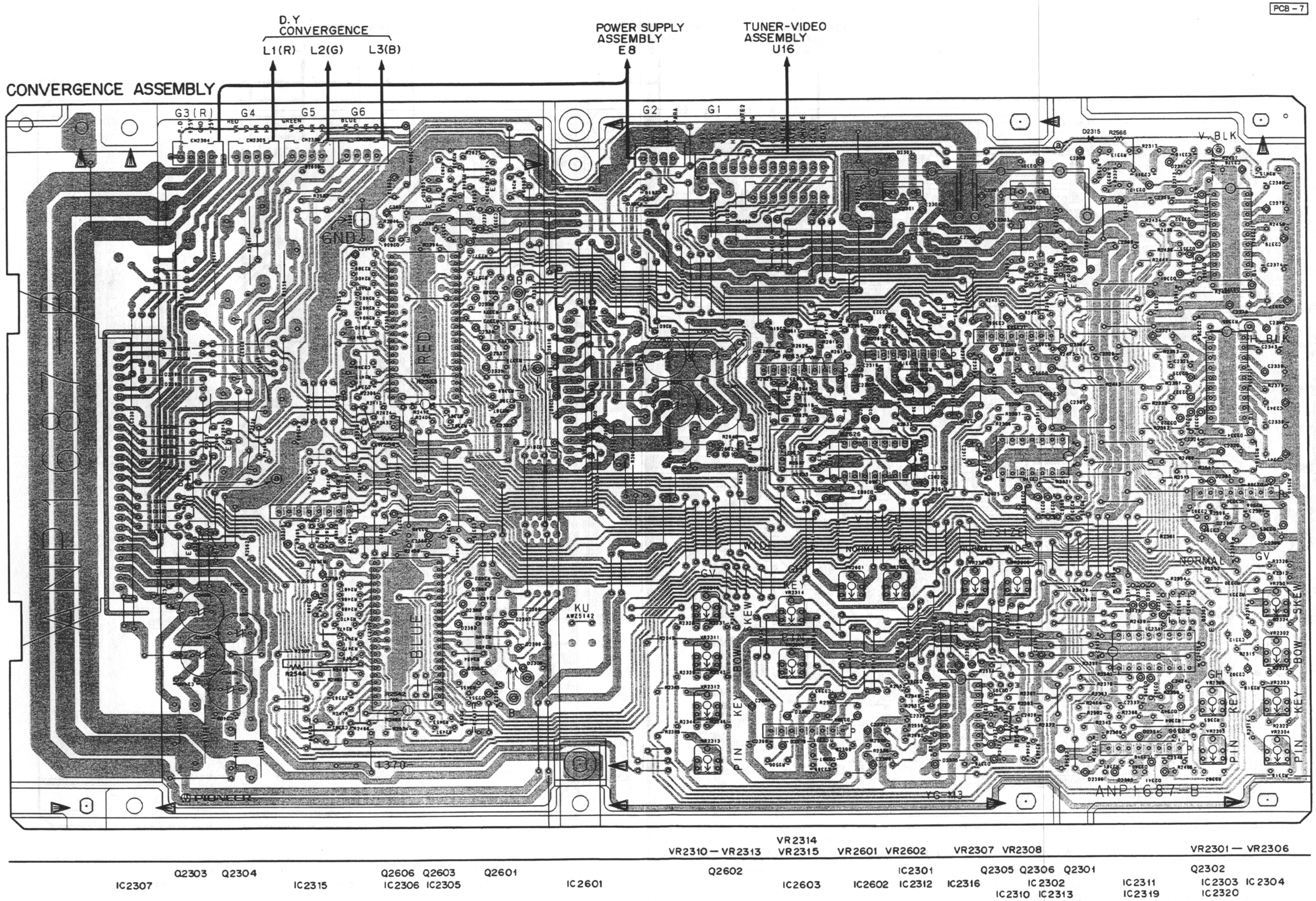


㉖ **IC2315 pin 8**
(V.KEY) at NORMAL and WIDE
V range : 0.5V/div.
H range : 5msec/div.



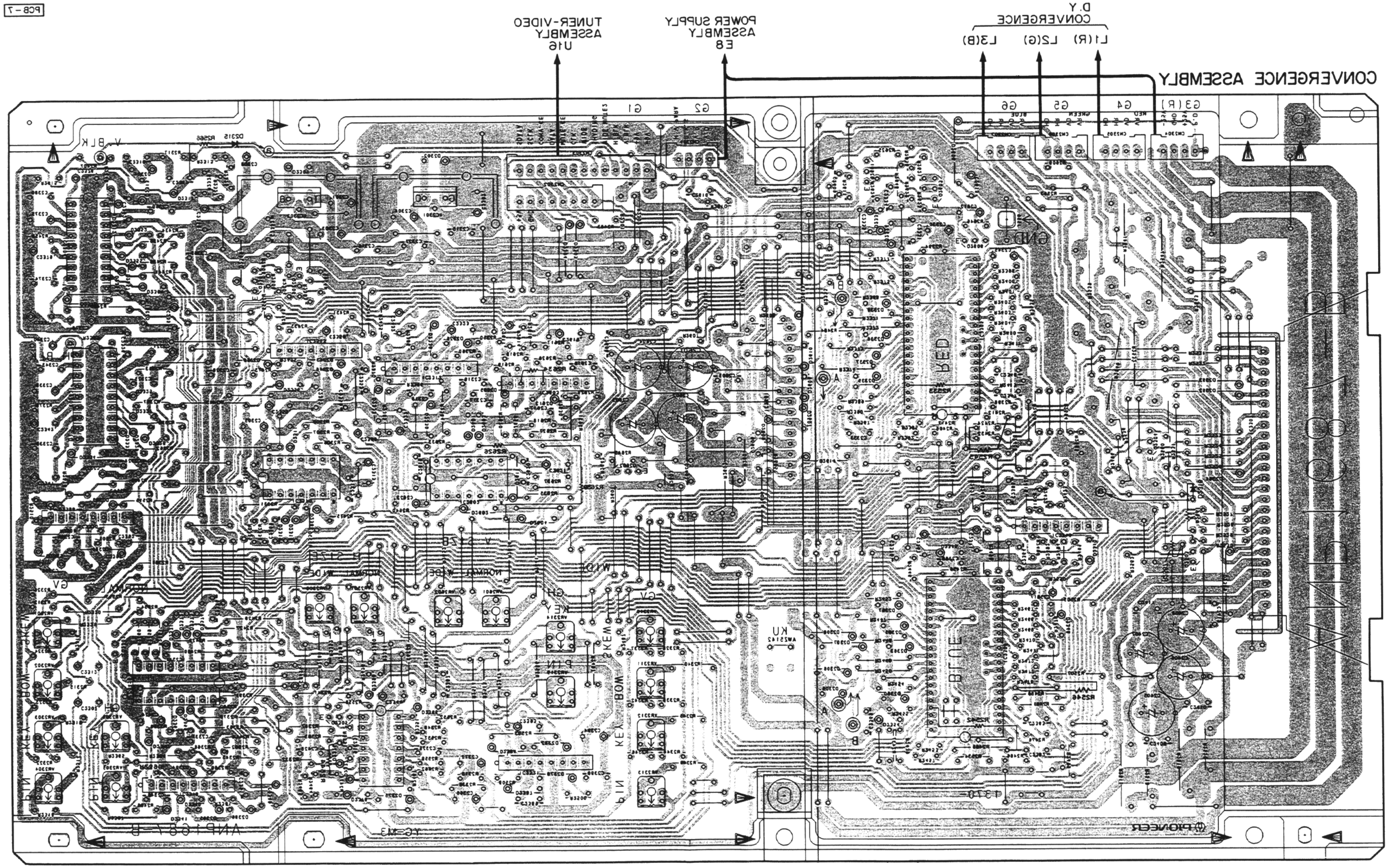
PCB-7

CONVERGENCE ASSEMBLY


D.Y
CONVERGENCE
L1(R)
L2(G)
L3(B)
POWER SUPPLY
ASSEMBLY
E8
TUNER-VIDEO
ASSEMBLY
U16
G3(R)
G4
G5
G6
G2
G1
GND
RED
BLUE
KU
V. BLK
H. BLK
NORMAL
WIDE
V. SIZE
H. SIZE
GV
GH
SKEW
BOW
KEY
PIN
ANP1687-B
PIONEER
VR2310 — VR2313
VR2314
VR2315
VR2601 VR2602
VR2307 VR2308
VR2301 — VR2306
IC2307
Q2303 Q2304
IC2315
Q2606 Q2603
IC2306 IC2305
Q2601
IC2601
Q2602
IC2603
IC2602
IC2301
IC2312
IC2316
Q2305 Q2306 Q2301
IC2302
IC2310 IC2313
IC2311
IC2319
Q2302
IC2303 IC2304
IC2320

• This diagram is viewed from the mounted parts side.

PCB-7


TUNER-VIDEO ASSEMBLY U16
POWER SUPPLY ASSEMBLY E8
D.Y CONVERGENCE
L1(R)
L2(G)
L3(B)
CONVERGENCE ASSEMBLY
G1
G2
G3(R)
G4
G5
G6
RED
BLUE
GND
V.BLK
KEY
PIN
SKEW
BOW
WIDE
NORMAL
GH
GV
KU
PIONEER
ANP1687-B
A
B
1
2
3
4
5
6

VR2301 — VR2306
Q2302
IC2303 IC2304
IC2320

IC2311
IC2319

VR2307 VR2308
Q2305 Q2306 Q2301
IC2302
IC2310 IC2313
IC2316

VR2601 VR2602
IC2301
IC2312 IC2602

VR2314
VR2315
VR2310 — VR2313
IC2603

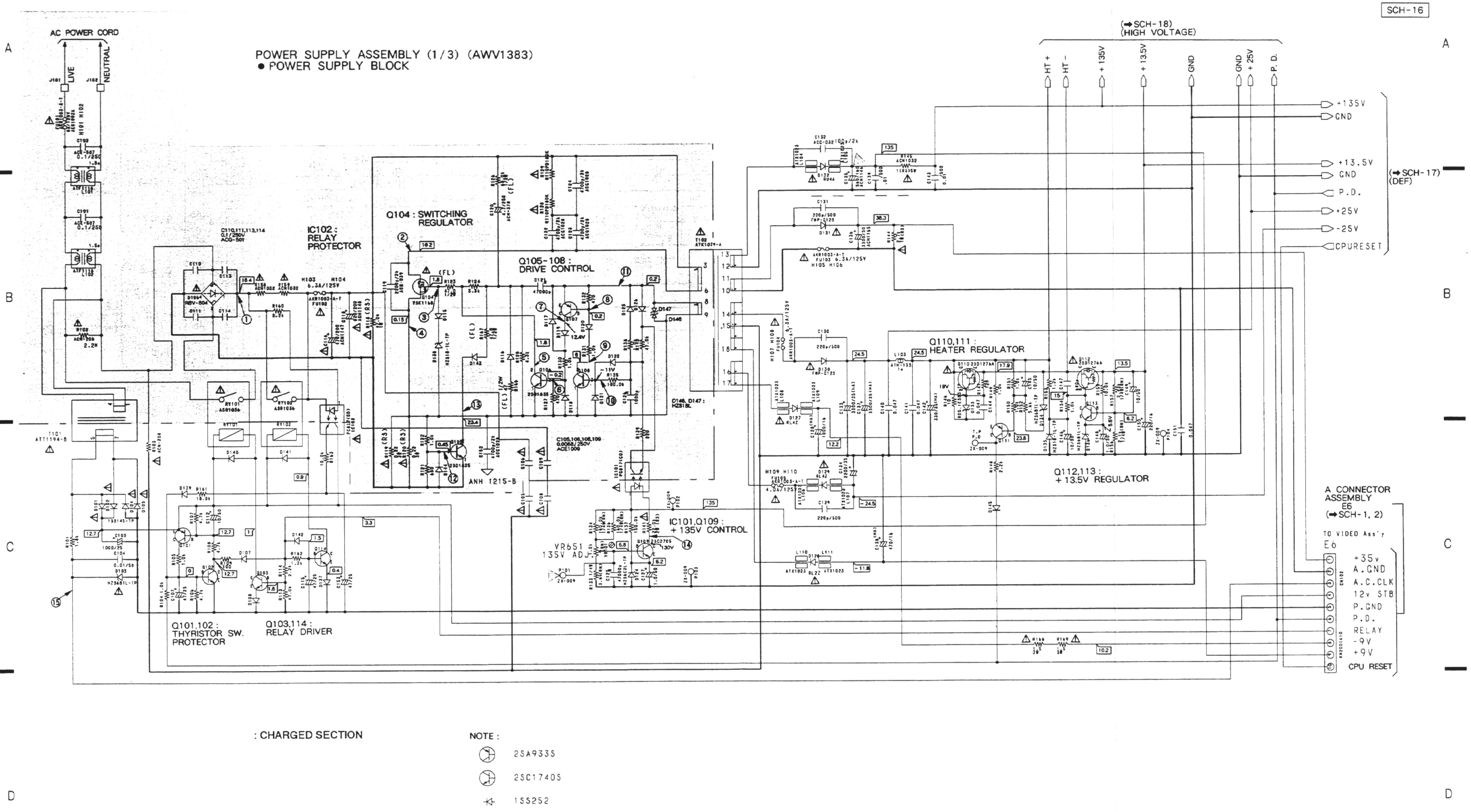
Q2602
IC2601
Q2601

Q2603 Q2606
IC2305 IC2306
IC2315

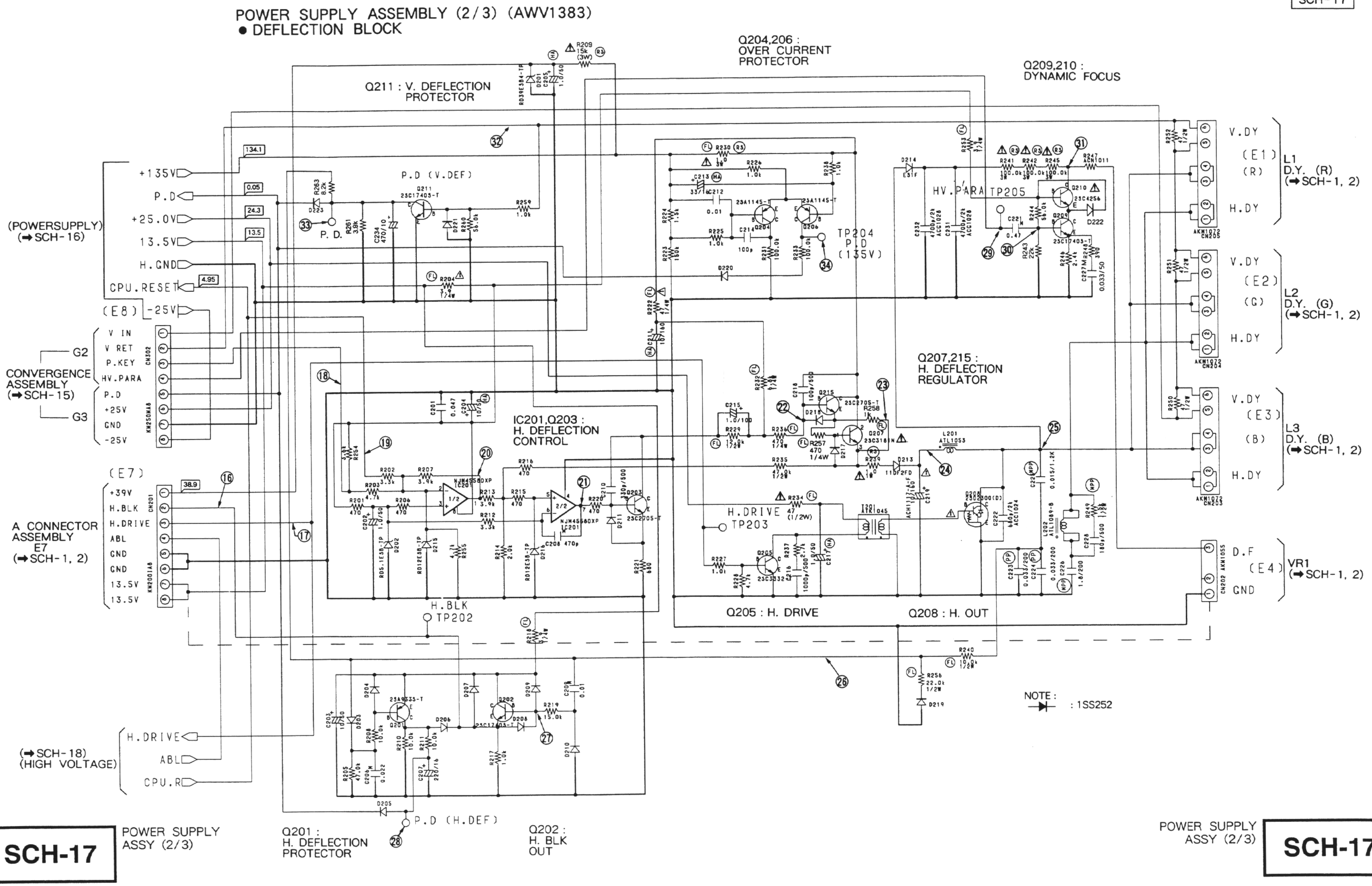
Q2304 Q2303
IC2307

- This diagram is viewed from the foil side.

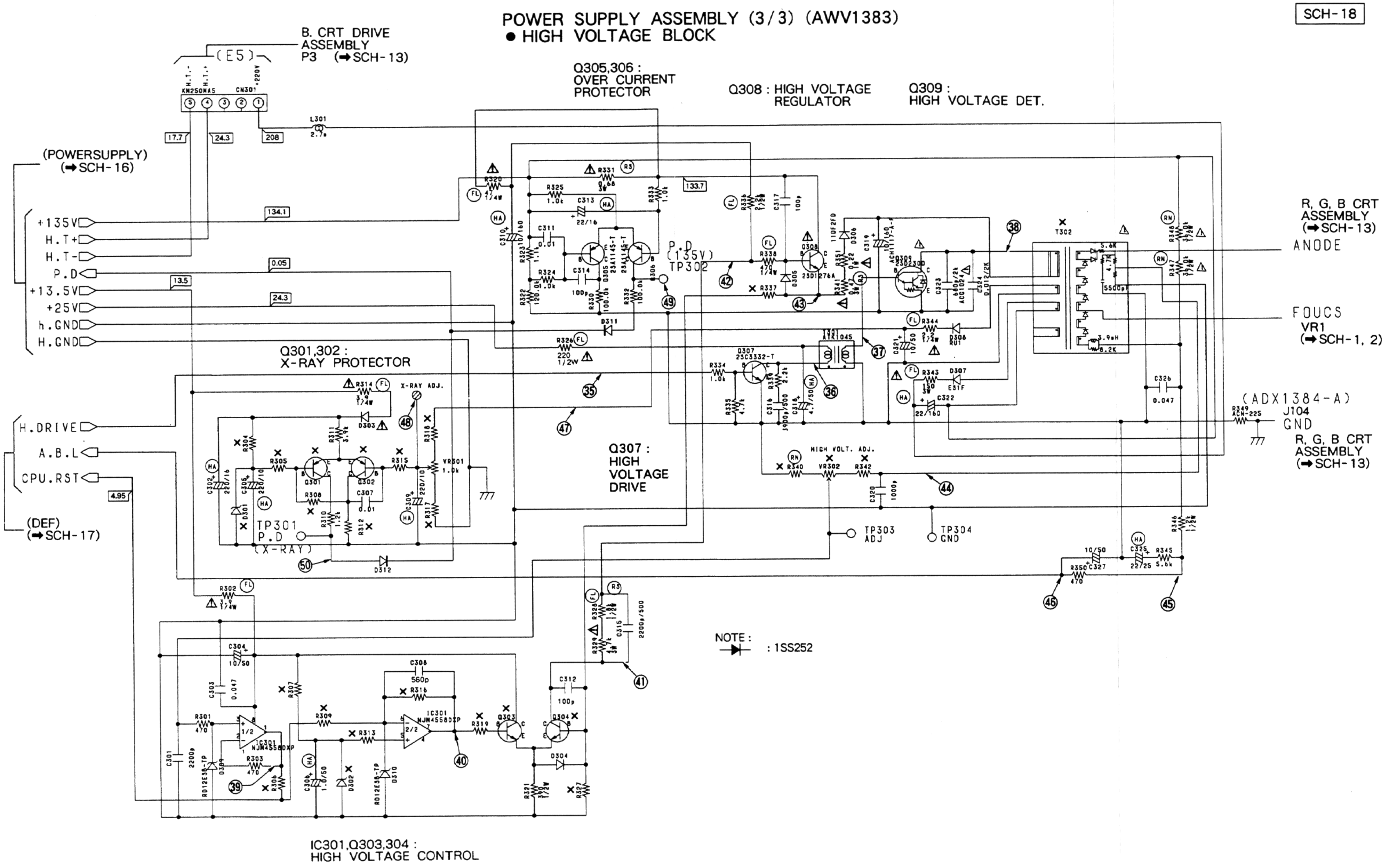
5.16 POWER SUPPLY ASSEMBLY (1/3)


SCH-16
AC POWER CORD
LIVE
NEUTRAL
POWER SUPPLY ASSEMBLY (1/3) (AWV1383)
● POWER SUPPLY BLOCK
(➡SCH-18)
(HIGH VOLTAGE)
HT +
HT -
+ 135V
+ 13.5V
GND
GND
+ 25V
P. D.
+135V
GND
+13.5V
GND
P.D.
+25V
-25V
CPURESET
(➡SCH-17)
(DEF)
IC102 :
RELAY
PROTECTOR
Q104 : SWITCHING
REGULATOR
Q105-108 :
DRIVE CONTROL
Q110,111 :
HEATER REGULATOR
Q112,113 :
+ 13.5V REGULATOR
IC101,Q109 :
+ 135V CONTROL
VR651
135V ADJ
Q101,102 :
THYRISTOR SW.
PROTECTOR
Q103,114 :
RELAY DRIVER
ANH 1215-B
A CONNECTOR
ASSEMBLY
E6
(➡SCH-1, 2)
TO VIDEO Ass'y
E6
+35v
A.GND
A.C.CLK
12v STB
P.GND
P.D.
RELAY
-9V
+9V
CPU RESET
A
B
C
D
: CHARGED SECTION
NOTE :
2SA933S
2SC1740S
1SS252

5.17 POWER SUPPLY ASSEMBLY (2/3)


POWER SUPPLY ASSEMBLY (2/3) (AWV1383)
● DEFLECTION BLOCK
Q211 : V. DEFLECTION PROTECTOR
Q204,206 : OVER CURRENT PROTECTOR
Q209,210 : DYNAMIC FOCUS
Q207,215 : H. DEFLECTION REGULATOR
IC201,Q203 : H. DEFLECTION CONTROL
Q205 : H. DRIVE
Q208 : H. OUT
Q201 : H. DEFLECTION PROTECTOR
Q202 : H. BLK OUT
(POWERSUPPLY) (➡SCH-16)
+135V
P.D
+25.0V
13.5V
H.GND
CPU.RESET
(E8) -25V
134.1
0.05
24.3
13.5
4.95
CONVERGENCE ASSEMBLY (➡SCH-15)
G2
G3
V IN
V RET
P.KEY
HV.PARA
P.D
+25V
GND
-25V
CN302
KM250NA8
(E7)
A CONNECTOR ASSEMBLY E7 (➡SCH-1, 2)
+39V
H.BLK
H.DRIVE
ABL
GND
GND
13.5V
13.5V
CN201
KM200NA8
38.9
(➡SCH-18) (HIGH VOLTAGE)
H.DRIVE
ABL
CPU.R
P.D (V.DEF)
P. D.
P.D (H.DEF)
H.BLK TP202
H.DRIVE TP203
TP204 P.D (135V)
HV.PARA TP205
R209 15k (3W)
V.DY
(E1)
(R)
H.DY
L1 D.Y. (R) (➡SCH-1, 2)
AKM1072 CN205
V.DY
(E2)
(G)
H.DY
L2 D.Y. (G) (➡SCH-1, 2)
AKM1072 CN204
V.DY
(E3)
(B)
H.DY
L3 D.Y. (B) (➡SCH-1, 2)
AKM1072 CN203
D.F
(E4)
GND
VR1 (➡SCH-1, 2)
CN202 AKM1055
2SC1740S-T
2SA1145-T
2SC4256
2SC2705-T
2SC3181N
2SC3332
2SD1500(D)
2SA933S-T
NJM4558DXP
IC201
T201 ATK1045
L201 ATL1053
R240 10.0k 1/2W
R256 22.0k 1/2W
D219
NOTE : ➡ : 1SS252
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔
㉕
㉖
㉗
㉘
㉙
㉚
㉛
㉜
㉝
㉞

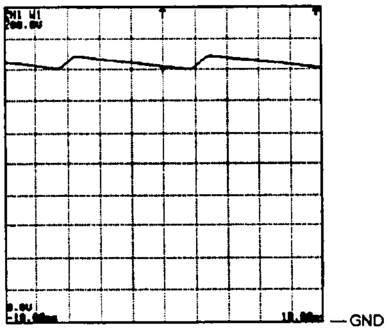
5.18 POWER SUPPLY ASSEMBLY (3/3)


SCH-18
POWER SUPPLY ASSEMBLY (3/3) (AWV1383)
● HIGH VOLTAGE BLOCK
B. CRT DRIVE ASSEMBLY P3 (➡SCH-13)
(E5)
KN25ONAS CN301
H.T.-
H.T.+
+220V
L301 2.7μ
17.7
24.3
208
(POWERSUPPLY) (➡SCH-16)
+135V
H.T+
H.T-
P.D
+13.5V
+25V
h.GND
H.GND
134.1
0.05
13.5
24.3
133.7
Q305,306 : OVER CURRENT PROTECTOR
Q308 : HIGH VOLTAGE REGULATOR
Q309 : HIGH VOLTAGE DET.
P.D (135V) TP302
T302
R, G, B CRT ASSEMBLY (➡SCH-13)
ANODE
FOUCS VR1 (➡SCH-1, 2)
(ADX1384-A)
J104
GND
R, G, B CRT ASSEMBLY (➡SCH-13)
Q301,302 : X-RAY PROTECTOR
X-RAY ADJ.
H.DRIVE
A.B.L
CPU.RST
4.95
(DEF) (➡SCH-17)
TP301 P.D (X-RAY)
Q307 : HIGH VOLTAGE DRIVE
HIGH VOLT. ADJ.
VR302
TP303 ADJ
TP304 GND
NOTE : 1SS252
IC301 NJM4558DXP
IC301,Q303,304 : HIGH VOLTAGE CONTROL
㉟
㊱
㊲
㊳
㊴
㊵
㊶
㊷
㊸
㊹
㊺
㊻
㊼
㊽
㊾
㊿

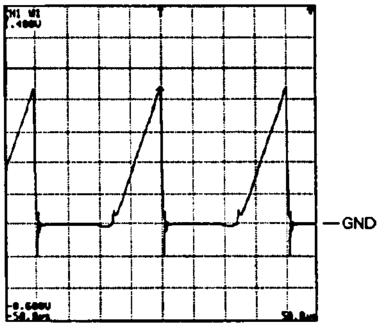
• Waveformes at Power Supply Assembly (Power supply block)

- Input signal : Monoscope (Normal) signal
- Picture quality : standard
- Screen size : standard
- Others : standard

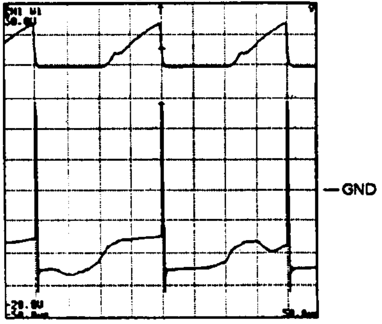
① **D1064 Cathode**
V range : 20V/div.
H range : 2msec/div.



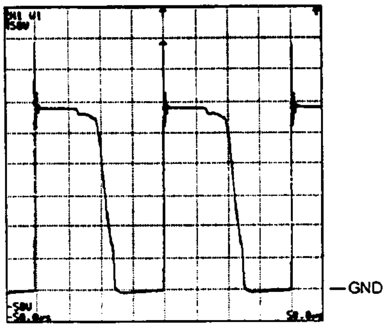
④ **Q104 Sourse**
V range : 200mV/div.
H range : 10 μsec/div.



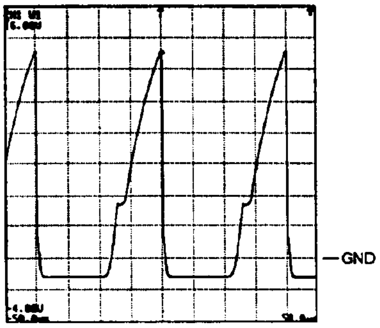
③-3 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 μsec/div.
⑦ **Lower : Q107 Collector**
V range : 5V/div.
H range : 10 μsec/div.



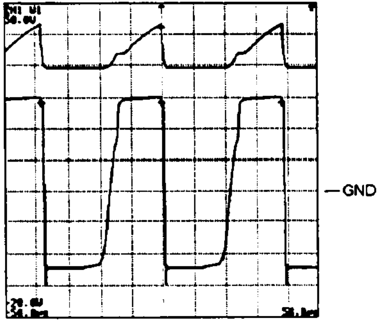
② **Q104 Dorein**
V range : 50V/div.
H range : 10 μsec/div.



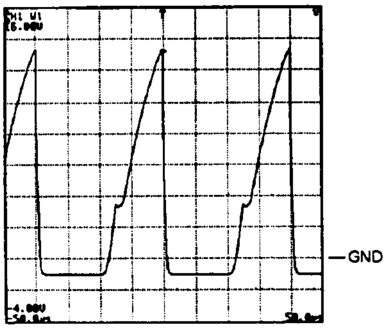
⑤ **Q106 Collector**
V range : 2V/div.
H range : 10 μsec/div.



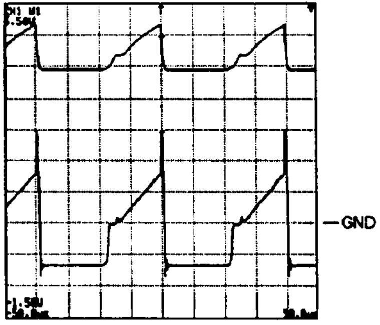
③-4 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 μsec/div.
⑧ **Lower : Q107 Base**
V range : 5V/div.
H range : 10 μsec/div.



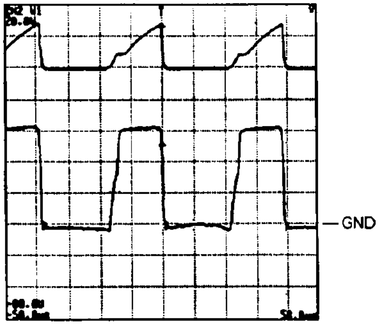
③-1 **Q104 Gate**
V range : 2V/div.
H range : 10 μsec/div.



③-2 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 μsec/div.
⑥ **Lower : Q106 Base**
V range : 500mV/div.
H range : 10 μsec/div.

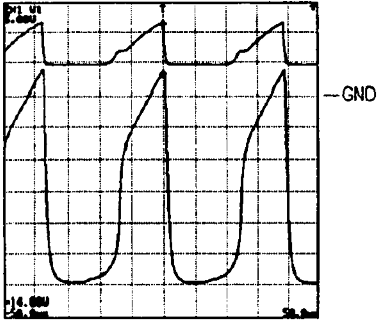


③-5 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 μsec/div.
⑨ **Lower : Q108 Collector**
V range : 5V/div.
H range : 10 μsec/div.



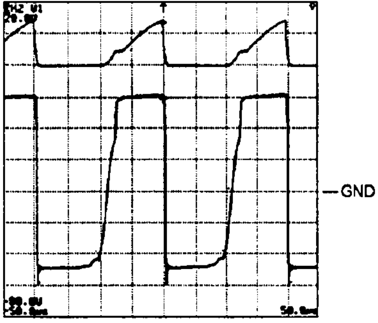
③-6 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 µsec/div.

⑩ **Lower : Q108 Base**
V range : 2V/div.
H range : 10 µsec/div.



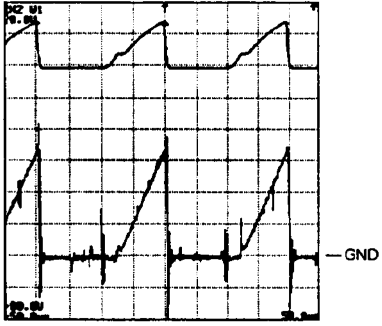
③-7 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 µsec/div.

⑪ **Lower : Q107 Emitter**
V range : 5V/div.
H range : 10 µsec/div.



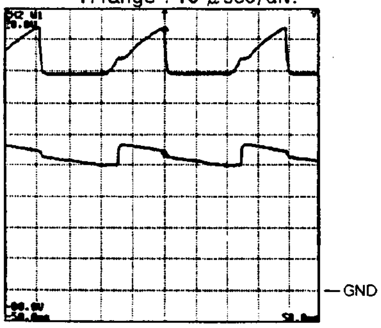
③-8 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 µsec/div.

⑫ **Lower : Q105 Base**
V range : 100mV/div.
H range : 10 µsec/div.

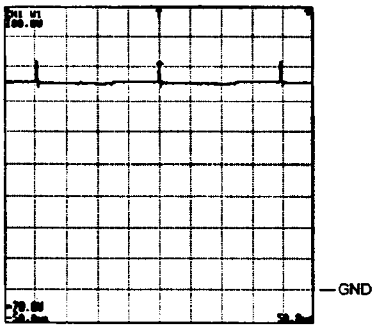


③-9 **Upper : Q104 Gate**
V range : 10V/div.
H range : 10 µsec/div.

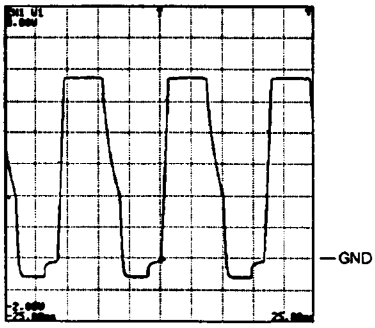
⑬ **Lower : Q105 Collector**
V range : 5V/div.
H range : 10 µsec/div.



⑭ **Q109 Collector**
V range : 20V/div.
H range : 10 µsec/div.



⑮ **D103 Cathode**
V range : 1V/div.
H range : 5msec/div.

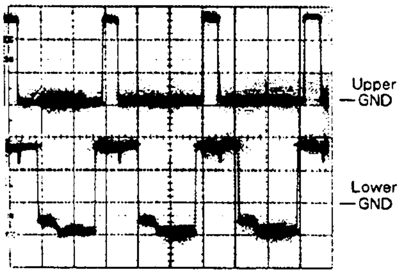


- **Waveformes at Power Supply Assembly (Deflection block)**

- Input signal : Monoscope (Normal) signal
- Picture quality : standard
- Screen size : standard
- Others : standard

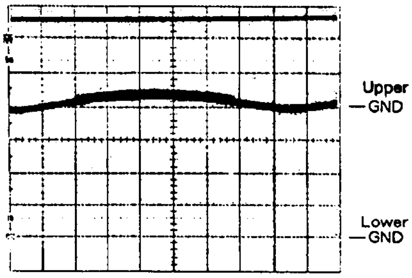
⑯ **Upper : E7 pin 2 (H. BLK)**
V range : 5V/div.
H range : 20 µsec/div.

⑰ **Lower : E7 pin 3 (H. DRIVE)**
V range : 1V/div.
H range : 20 µsec/div.



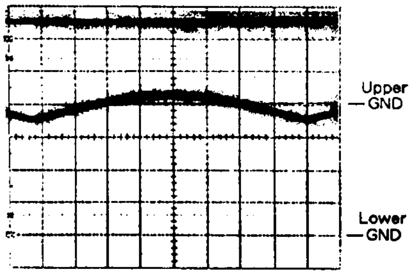
⑱-1 **Upper : E8 pin 3 (P. KEY) at Normal mode**
V range : 2V/div.
H range : 2msec/div.

⑲-1 **Lower : Lead wire of R202 at Normal mode**
V range : 2V/div.
H range : 2msec/div.



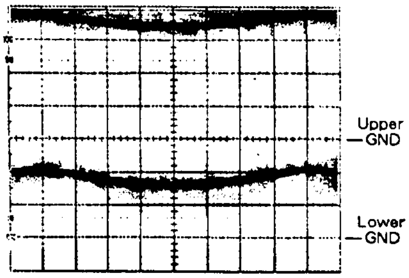
⑱-2 **Upper : E8 pin 3 (P. KEY) at Zoom mode**
V range : 2V/div.
H range : 2msec/div.

⑲-2 **Lower : Lead wire of R202 at Zoom mode**
V range : 2V/div.
H range : 2msec/div.



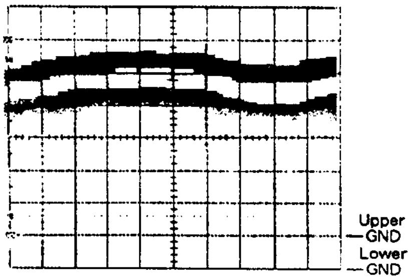
⑳ **Upper : IC201 pin 1**
V range : 2V/div.
H range : 2msec/div.

㉑ **Lower : IC201 pin 7**
V range : 2V/div.
H range : 2msec/div.



㉒ **Upper : Q215 Base**
V range : 20V/div.
H range : 2msec/div.

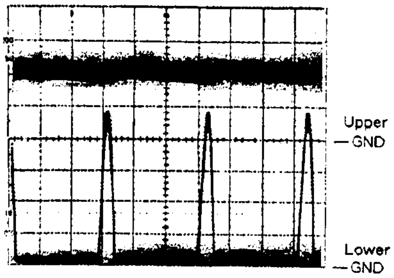
㉓ **Lower : Q207 Emitter**
V range : 20V/div.
H range : 2msec/div.



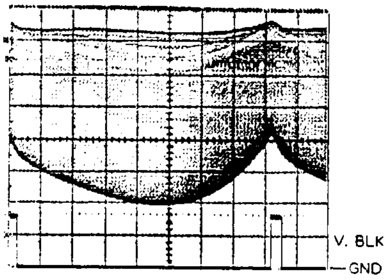
• Waveformes at Power Supply Assembly (High voltage block)

- Input signal : Monoscope (Normal) signal
- Picture quality : standard
- Screen size : standard
- Others : standard

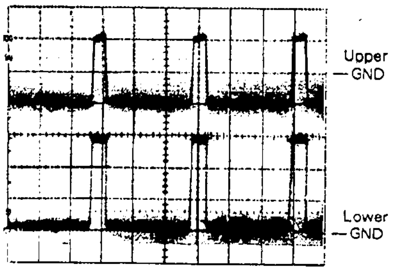
㉔ **Upper : D213 Cathode**
V range : 20V/div.
H range : 20 μsec/div.
㉕ **Lower : Q208 Collector**
V range : 200V/div.
H range : 20 μsec/div.



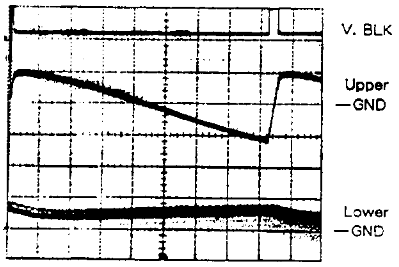
㉛ **Q210 Collector**
V range : 100V/div.
H range : 2msec/div.



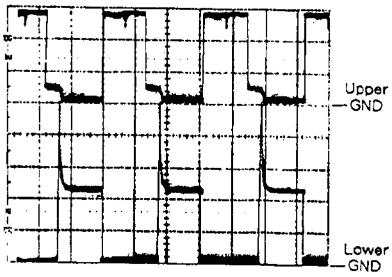
㉖ **Upper : D203 Anode**
V range : 20V/div.
H range : 20 μsec/div.
㉗ **Lower : Q202 Base**
V range : 5V/div.
H range : 20 μsec/div.



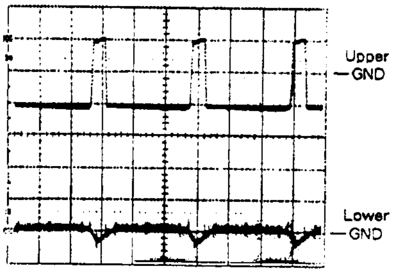
㉜ **Upper : E8 pin 2 (V RET)**
V range : 1V/div.
H range : 2msec/div.
㉝ **Lower : TP-P.D. (Q211 Collector)**
V range : 2V/div.
H range : 2msec/div.



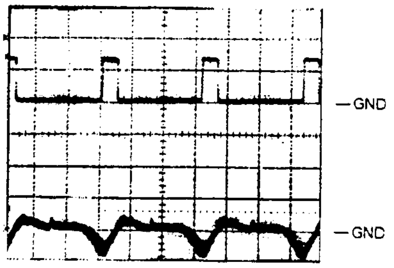
㉟ **Upper : Lead wire of R334 (H. DRIVE)**
V range : 1V/div.
H range : 20 μsec/div.
㊱ **Lower : Q307 Collector**
V range : 20V/div.
H range : 20 μsec/div.



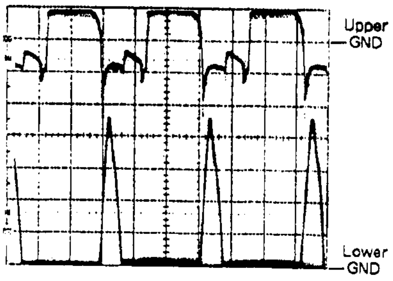
㉖ **Upper : D203 Anode**
V range : 20V/div.
H range : 20 μsec/div.
㉘ **Lower : TP-P. D. (D205 Anode)**
V range : 0.2V/div.
H range : 20 μsec/div.



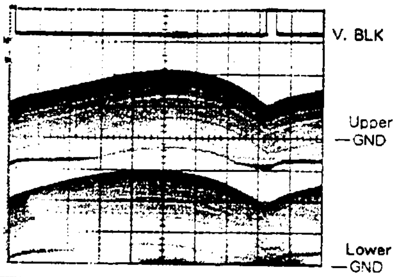
⑯ **Upper : E7 pin 2 (H. BLK)**
V range : 10V/div.
H range : 20 μsec/div.
㉞ **Lower : TP204 (P. D)**
V range : 0.5V/div.
H range : 20 μsec/div.



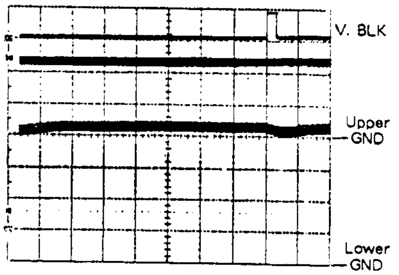
㊲ **Upper : Q309 Base**
V range : 1V/div.
H range : 20 μsec/div.
㊳ **Lower : Q309 Collector**
V range : 200V/div.
H range : 20 μsec/div.



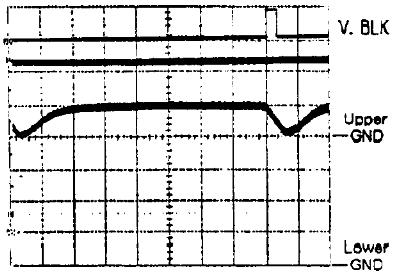
㉙ **Upper : TP205 (HV. PARA)**
V range : 2V/div.
H range : 2msec/div.
㉚ **Lower : Q209 Base**
V range : 2V/div.
H range : 2msec/div.



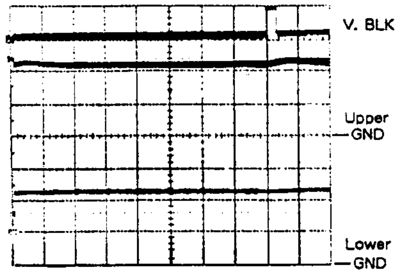
㊴ **Upper : IC301 pin 1**
V range : 2V/div.
H range : 2msec/div.
㊵ **Lower : IC301 pin 7**
V range : 2V/div.
H range : 2msec/div.



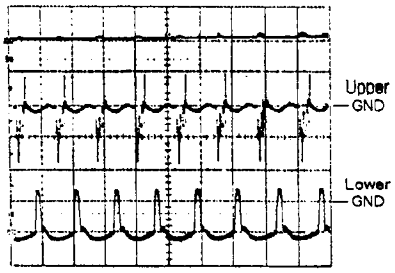
㊴ **Upper : IC301 pin 1**
V range : 2V/div.
H range : 2msec/div.
㊶ **Lower : Q304 Collector**
V range : 20V/div.
H range : 2msec/div.



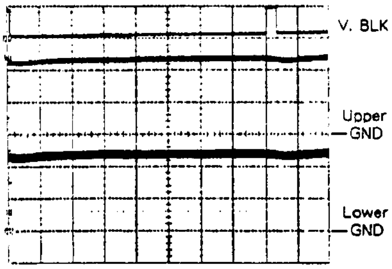
㊺ **Upper : Between R345 and R346**
V range : 5V/div.
H range : 2msec/div.
㊻ **Lower : C327 + side**
V range : 5V/div.
H range : 2msec/div.



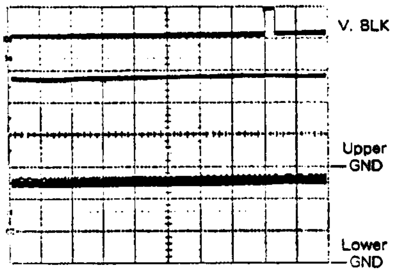
㊾ **Upper : TP302 (P.D.)**
V range : 1V/div.
H range : 50 µsec/div.
㊿ **Lower : TP301 (P.D.)**
V range : 0.5V/div.
H range : 50 µsec/div.



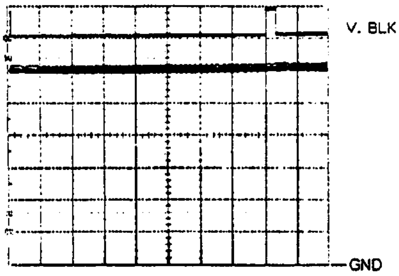
㊷ **Upper : Between R336 and R338**
V range : 50V/div.
H range : 2msec/div.
㊸ **Lower : Q308 Emitter**
V range : 50V/div.
H range : 2msec/div.



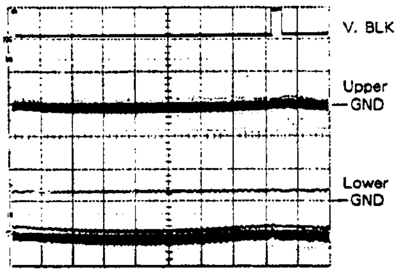
㊼ **Upper : C321 + side**
V range : 10V/div.
H range : 2msec/div.
㊽ **Lower : C309 + side (X-RAY)**
V range : 2V/div.
H range : 2msec/div.

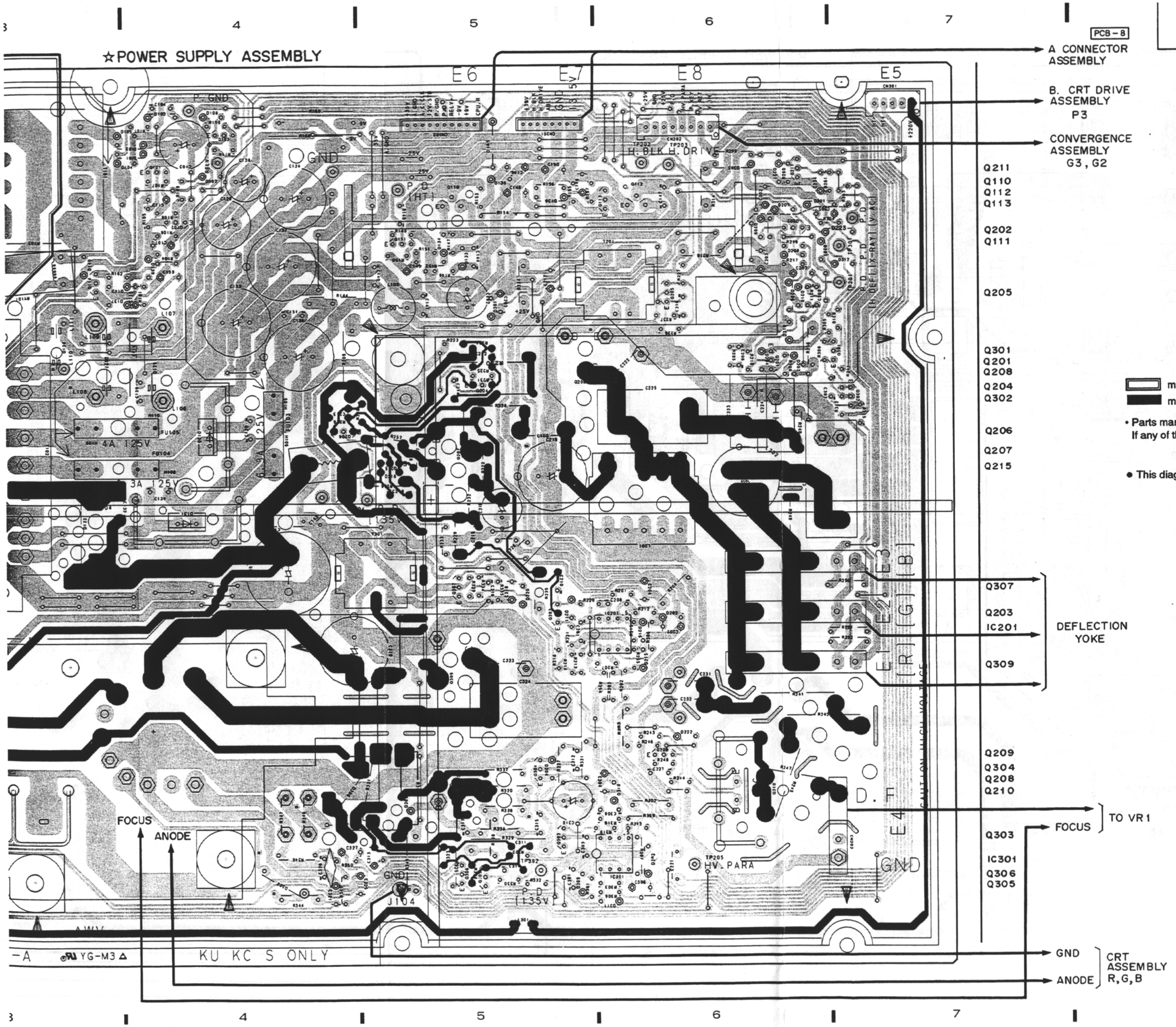


㊹ **Between R342 and C320**
V range : 2V/div.
H range : 2msec/div.



㊾ **Upper : TP302 (P.D.)**
V range : 1V/div.
H range : 2msec/div.
㊿ **Lower : TP301 (P.D.)**
V range : 0.5V/div.
H range : 2msec/div.




☆POWER SUPPLY ASSEMBLY
PCB-8
A CONNECTOR ASSEMBLY
B. CRT DRIVE ASSEMBLY P3
CONVERGENCE ASSEMBLY G3, G2
E6
E7
E8
E5
P. GND
GND
H. BLK H. DRIVE
P. D (HT)
4A 125V
3A 125V
125V
(H. DEFL) (X-RAY) (V. AC)
Q211
Q110
Q112
Q113
Q202
Q111
Q205
Q301
Q201
Q208
Q204
Q302
Q206
Q207
Q215
Q307
Q203
IC201
Q309
DEFLECTION YOKE
E3 (B)
E2 (G)
E1 (R)
CAUTION HIGH VOLTAGE
D. F
E4
GND
Q209
Q304
Q208
Q210
Q303
IC301
Q306
Q305
FOCUS
TO VR1
TP205 HV. PARA
P. D (135V)
J104
FOCUS
ANODE
GND
ANODE
CRT ASSEMBLY R, G, B
YG-M3
KU KC S ONLY
3
4
5
6
7
8
9
A
B
C
D

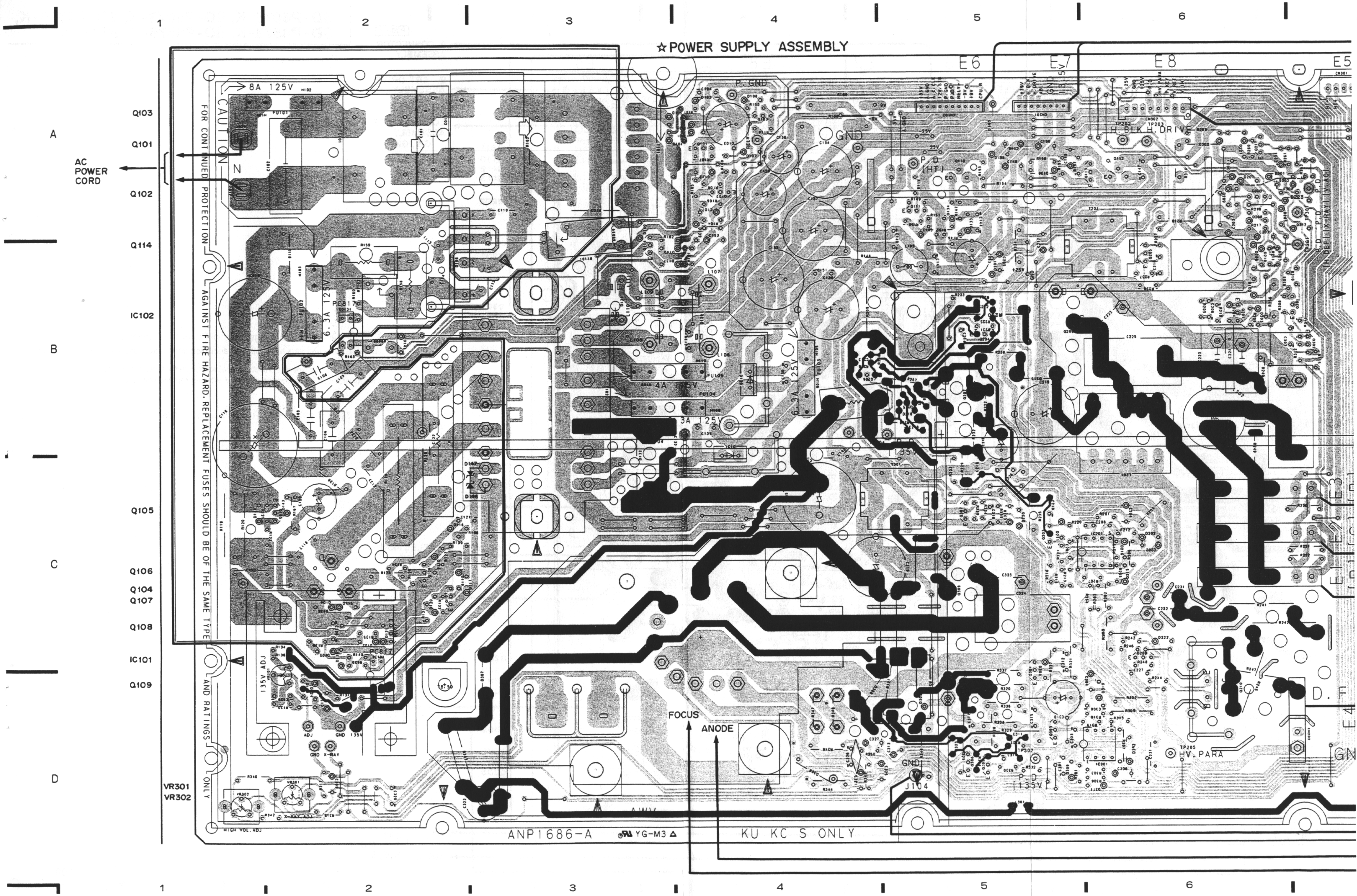
▭ mark shows the charged section (Power supply primary side circuit).

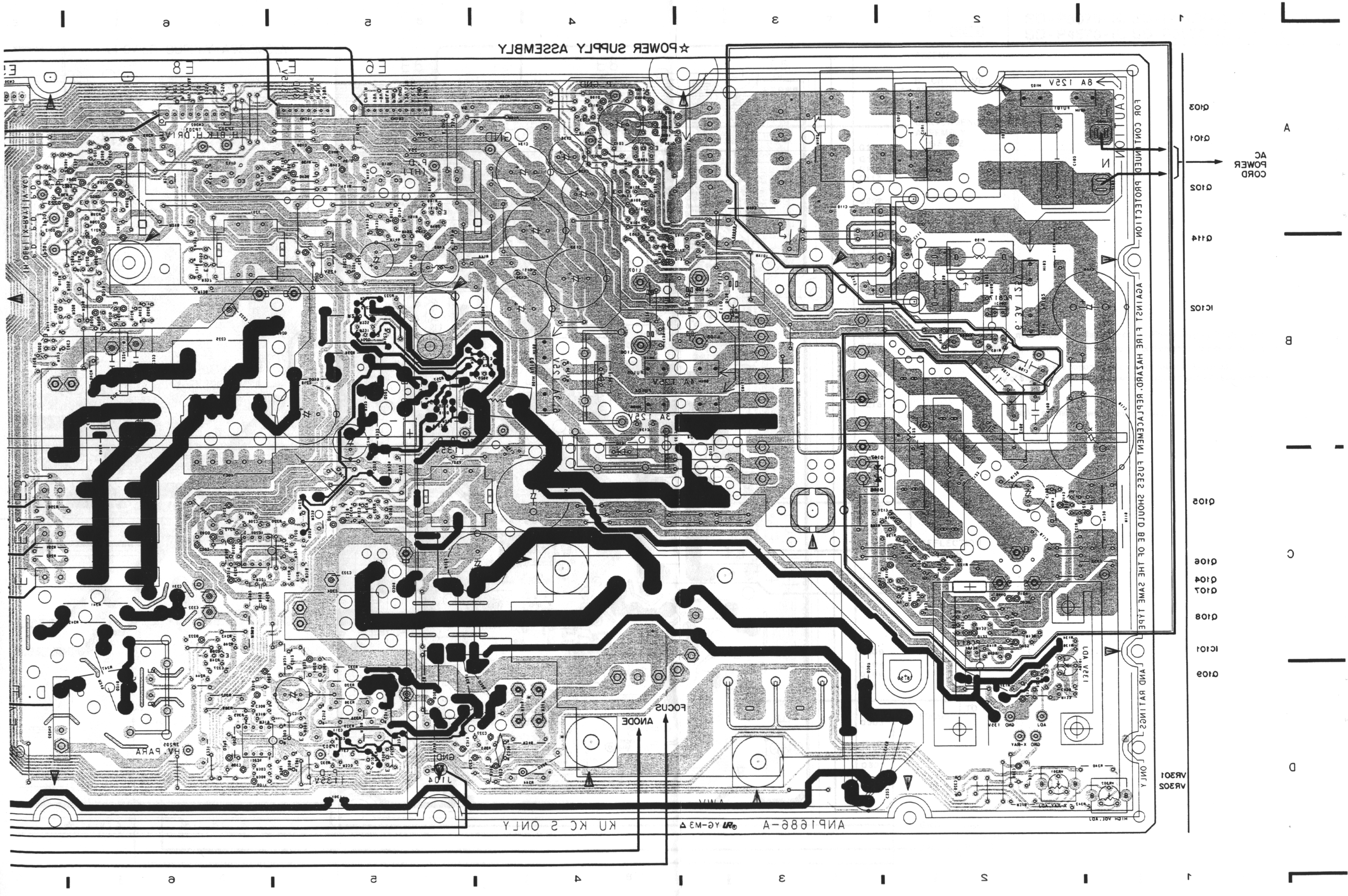
■ mark shows a high voltage generation point (excepting the charged section).

- Parts marked ☆ are important parts which relate to X-ray radiation. If any of these parts need to replaced. Always replace with specified parts.

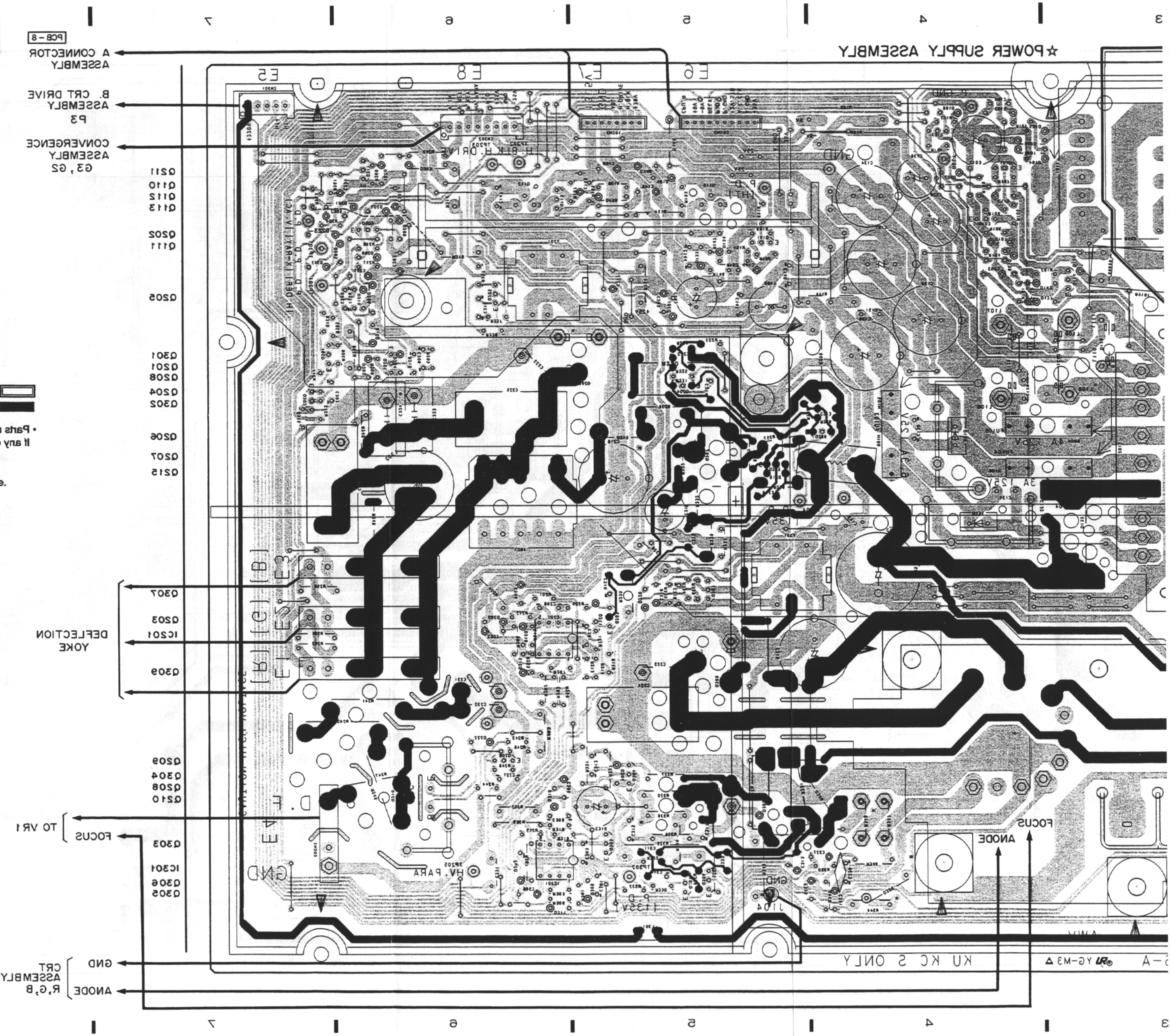
● This diagram is viewed from the mounted parts side.

☆POWER SUPPLY ASSEMBLY


1
2
3
4
5
6
A
B
C
D
Q103
Q101
AC POWER CORD
Q102
Q114
IC102
Q105
Q106
Q104
Q107
Q108
IC101
Q109
VR301
VR302
E6
E7
E8
E5
8A 125V
N
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY
6.3A 125V
4A 125V
3A 125V
6.3A 125V
P. GND
GND
P.D (HT)
H.BLK H.DRIVE
TP202
TP203
135V ADJ
ADJ
GND
135V
X-RAY
HIGH VOL.ADJ
FOCUS
ANODE
J104
P.D (135V)
TP205
HV. PARA
D. F
ANP1686-A
YG-M3
KU KC S ONLY


☆POWER SUPPLY ASSEMBLY
6
5
4
3
2
1
A
B
C
D
AC POWER CORD
Q103
Q101
Q102
Q114
IC102
Q105
Q106
Q104
Q107
Q108
IC101
Q109
VR301
VR302
FOCUS
ANODE
ANP1686-A
KU KC S ONLY
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY
8A 125V
3A 125V
GND
HV. PARA
J104

☆POWER SUPPLY ASSEMBLY


PCB-8
A CONNECTOR ASSEMBLY
B. CRT DRIVE ASSEMBLY P3
CONVERGENCE ASSEMBLY G3, G2
DEFLECTION YOKE
TO VR1
FOCUS
GND
ANODE
CRT ASSEMBLY R, G, B
FOCUS
ANODE
GND
H.BLK H.DRIVE
HV.PARA
KU KC S ONLY
YG-M3

▭ mark shows the charged section (Power supply primary side circuit).

▬ mark shows a high voltage generation point (excepting the charged section).

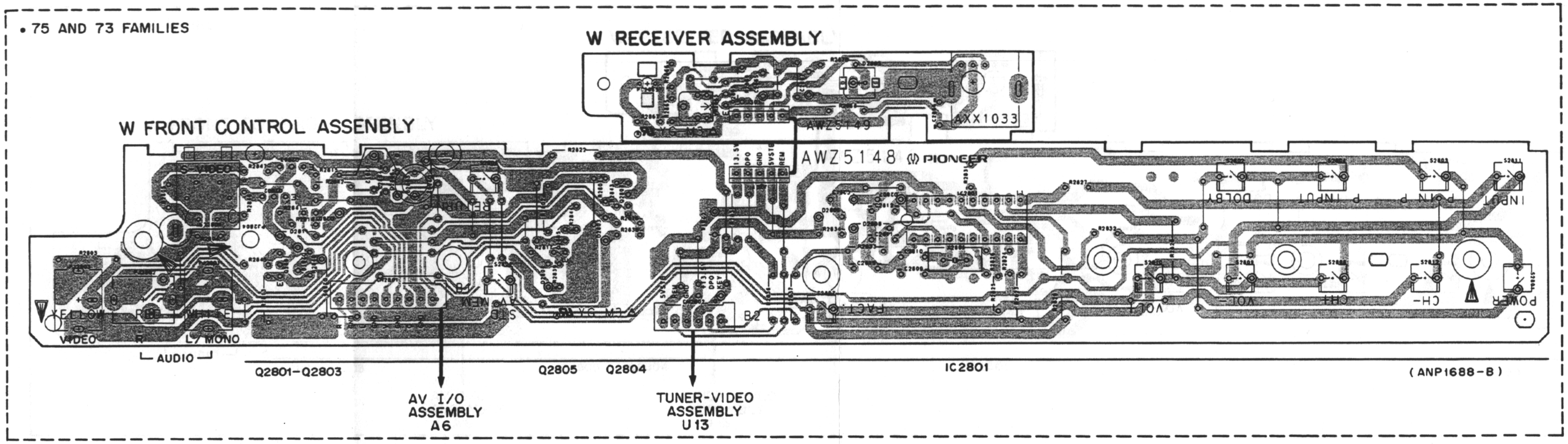
- Parts marked ☆ are important parts which relate to X-ray radiation. If any of these parts need to replaced. Always replace with specified parts.

● This diagram is viewed from the foil side.

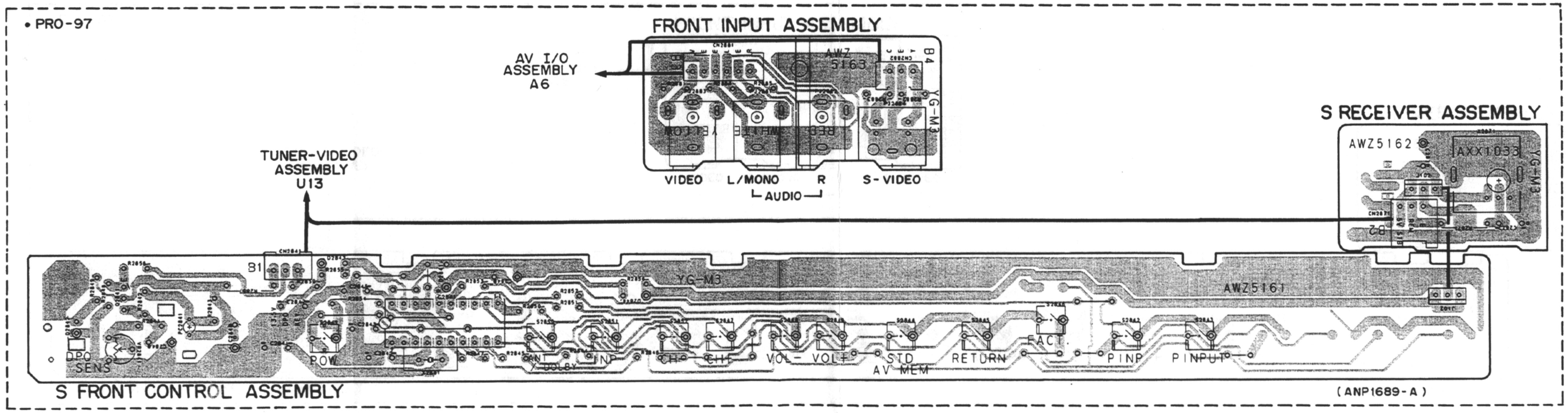
- This diagram is viewed from the foil side.

5.19 W FRONT CONTROL, W RECEIVER, S FRONT CONTROL, S RECEIVER AND FRONT INPUT ASSEMBLIES

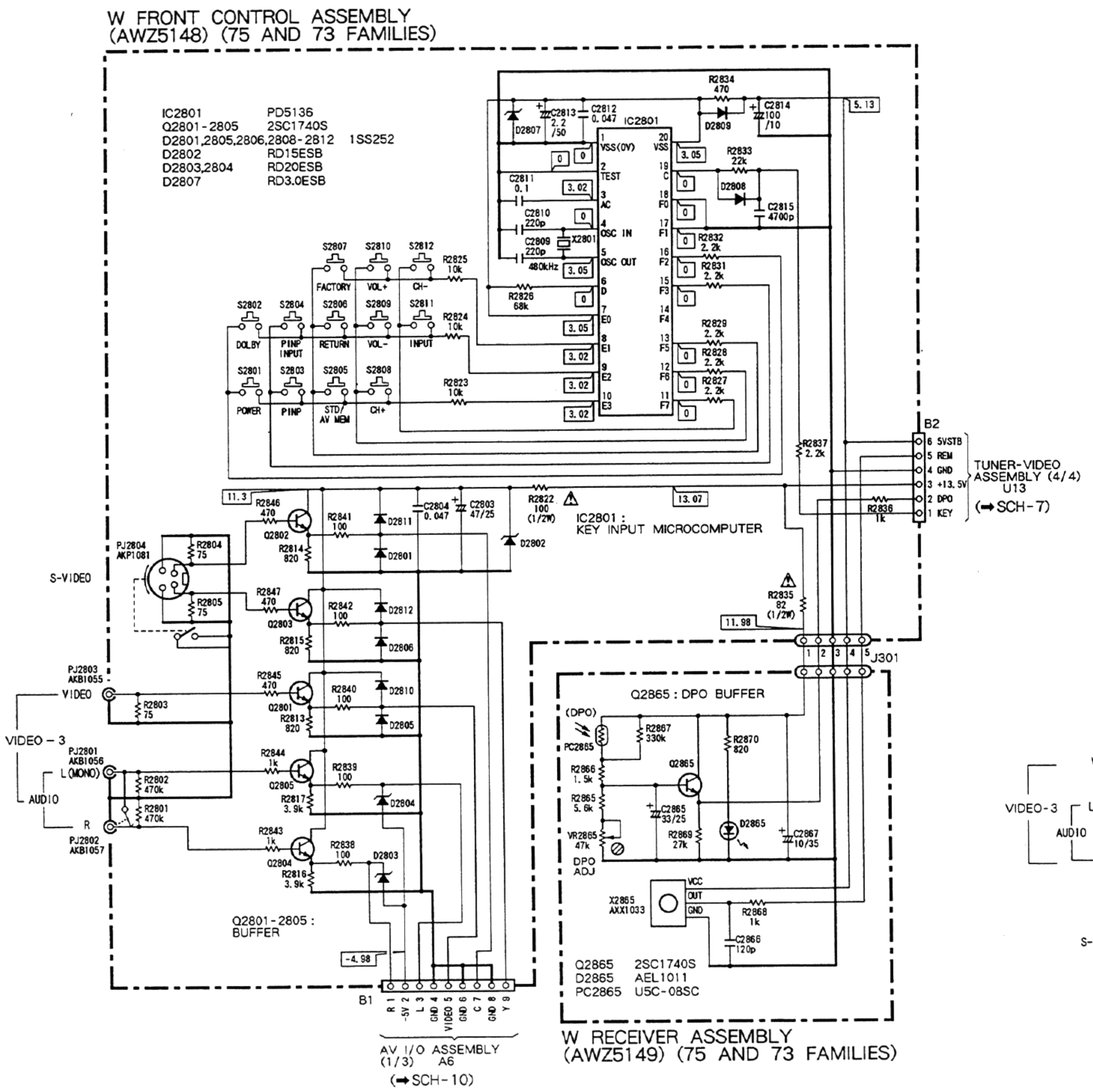
PCB-9


• 75 AND 73 FAMILIES
W RECEIVER ASSEMBLY
AWZ5149
AXX1033
W FRONT CONTROL ASSENBLY
AWZ5148
PIONEER
S-VIDEO
YELLOW
RED
WHITE
VIDEO
R
L/MONO
AUDIO
YG-M3
B2
DOLBY
P.INPUT
P.INP
INPUT
FACT
VOL+
VOL-
CH+
CH-
POWER
Q2801–Q2803
Q2805
Q2804
IC2801
(ANP1688-B)
AV I/O ASSEMBLY A6
TUNER-VIDEO ASSEMBLY U13

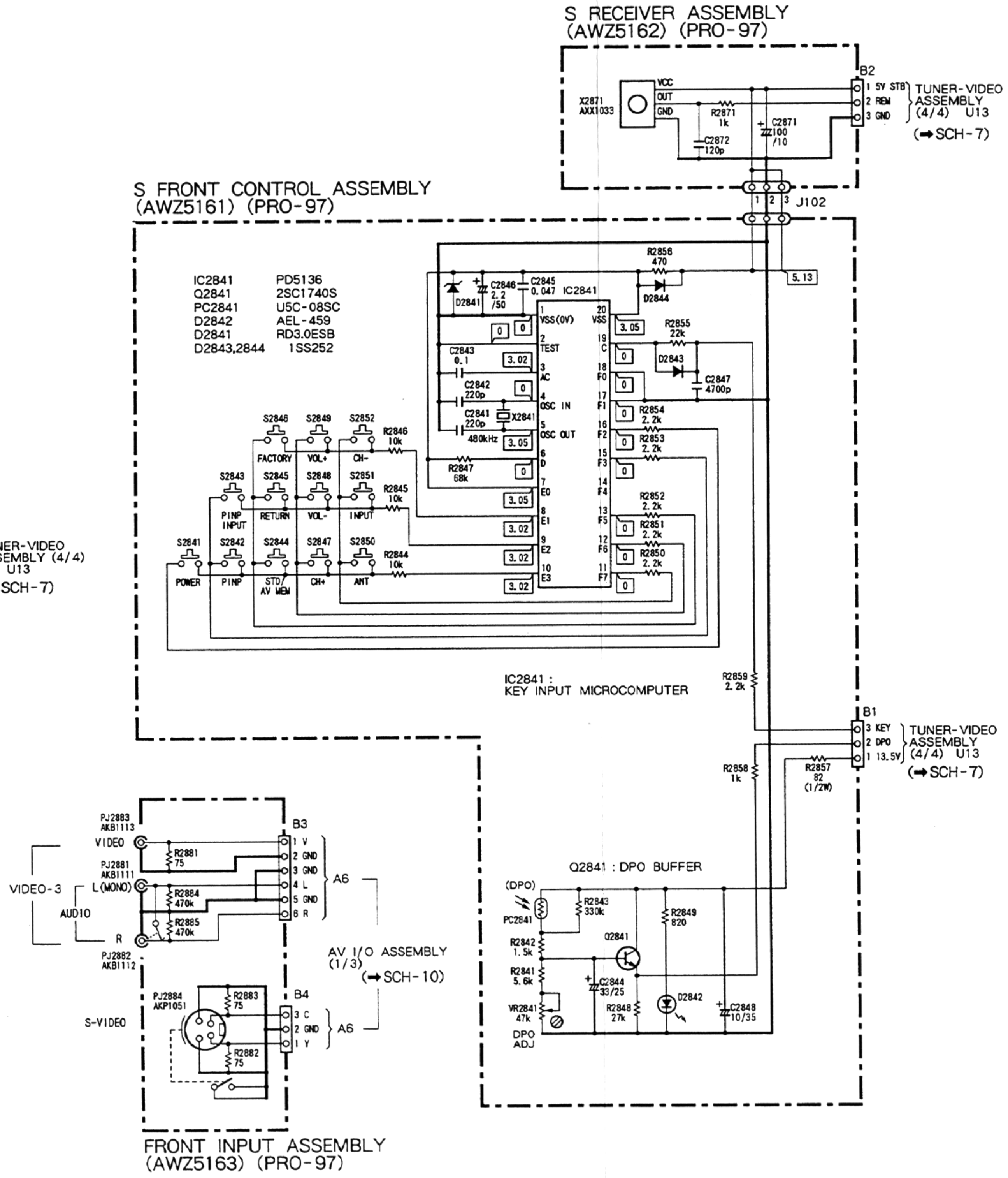
• This diagram is viewed from the mounted parts side.


• PRO-97
FRONT INPUT ASSEMBLY
AWZ5163
B4
YG-M3
YELLOW
WHITE
RED
VIDEO
L/MONO
R
S-VIDEO
AUDIO
AV I/O ASSEMBLY A6
TUNER-VIDEO ASSEMBLY U13
S RECEIVER ASSEMBLY
AWZ5162
AXX1033
YG-M3
B2
B1
YG-M3
AWZ5161
DPO
SENS
POW
ANT
DOLBY
INP
CH-
CH+
VOL-
VOL+
STD
AV MEM
RETURN
FACT
P.INP
P.INPUT
S FRONT CONTROL ASSEMBLY
(ANP1689-A)

- **75 and 73 Families**


W FRONT CONTROL ASSEMBLY
(AWZ5148) (75 AND 73 FAMILIES)
IC2801 PD5136
Q2801 - 2805 2SC1740S
D2801,2805,2806,2808 - 2812 1SS252
D2802 RD15ESB
D2803,2804 RD20ESB
D2807 RD3.0ESB
IC2801
VSS(0V)
TEST
AC
OSC IN
OSC OUT
480kHz
X2801
S2807 S2810 S2812
FACTORY VOL+ CH-
S2802 S2804 S2806 S2809 S2811
DOLBY PINP INPUT RETURN VOL- INPUT
S2801 S2803 S2805 S2808
POWER PINP STD/ AV MEM CH+
R2834 470
D2809
C2814 100 /10
C2813 2.2 /50
C2812 0.047
D2807
R2833 22k
D2808
C2815 4700p
C2811 0.1
C2810 220p
C2809 220p
R2825 10k
R2824 10k
R2826 68k
R2823 10k
R2832 2.2k
R2831 2.2k
R2829 2.2k
R2828 2.2k
R2827 2.2k
5.13
3.05
3.02
R2837 2.2k
R2836 1k
B2
6 5VSTB
5 REM
4 GND
3 +13.5V
2 DPO
1 KEY
TUNER-VIDEO ASSEMBLY (4/4) U13
(➡SCH-7)
11.3
13.07
R2822 100 (1/2W)
C2804 0.047
C2803 47/25
D2802
IC2801 : KEY INPUT MICROCOMPUTER
R2846 470
R2841 100
D2811
D2801
Q2802
R2814 820
PJ2804 AKP1081
R2804 75
R2805 75
S-VIDEO
R2847 470
R2842 100
D2812
D2806
Q2803
R2815 820
R2835 82 (1/2W)
11.98
J301
PJ2803 AKB1055
VIDEO
R2803 75
R2845 470
R2840 100
D2810
D2805
Q2801
R2813 820
VIDEO-3
PJ2801 AKB1056
L (MONO)
AUDIO
R
PJ2802 AKB1057
R2802 470k
R2801 470k
R2844 1k
R2839 100
Q2805
R2817 3.9k
D2804
R2843 1k
R2838 100
D2803
Q2804
R2816 3.9k
Q2801 - 2805 : BUFFER
-4.98
B1
R 1 -5V 2 L 3 GND 4 VIDEO 5 GND 6 C 7 GND 8 Y 9
AV I/O ASSEMBLY (1/3) A6
(➡SCH-10)
Q2865 : DPO BUFFER
(DPO)
PC2865
R2867 330k
R2870 820
Q2865
R2866 1.5k
R2865 5.6k
C2865 33/25
D2865
VR2865 47k
DPO ADJ
R2869 27k
C2867 10/35
X2865 AXX1033
VCC OUT GND
R2868 1k
C2866 120p
Q2865 2SC1740S
D2865 AEL1011
PC2865 U5C-08SC
W RECEIVER ASSEMBLY
(AWZ5149) (75 AND 73 FAMILIES)

- **PRO-97**


S RECEIVER ASSEMBLY
(AWZ5162) (PRO-97)
X2871 AXX1033
VCC OUT GND
R2871 1k
C2872 120p
C2871 100 /10
B2
1 5V STB
2 REM
3 GND
TUNER-VIDEO ASSEMBLY (4/4) U13
(➡SCH-7)
J102
S FRONT CONTROL ASSEMBLY
(AWZ5161) (PRO-97)
IC2841 PD5136
Q2841 2SC1740S
PC2841 U5C-08SC
D2842 AEL-459
D2841 RD3.0ESB
D2843,2844 1SS252
R2856 470
D2844
C2846 2.2 /50
C2845 0.047
IC2841
D2841
VSS(0V)
TEST
AC
OSC IN
OSC OUT
480kHz
X2841
R2855 22k
D2843
C2847 4700p
C2843 0.1
C2842 220p
C2841 220p
5.13
3.05
3.02
S2846 S2849 S2852
FACTORY VOL+ CH-
S2843 S2845 S2848 S2851
PINP INPUT RETURN VOL- INPUT
S2841 S2842 S2844 S2847 S2850
POWER PINP STD/ AV MEM CH+ ANT
R2846 10k
R2845 10k
R2844 10k
R2847 68k
R2854 2.2k
R2853 2.2k
R2852 2.2k
R2851 2.2k
R2850 2.2k
IC2841 : KEY INPUT MICROCOMPUTER
R2859 2.2k
B1
3 KEY
2 DPO
1 13.5V
TUNER-VIDEO ASSEMBLY (4/4) U13
(➡SCH-7)
R2858 1k
R2857 82 (1/2W)
PJ2883 AKB1113
VIDEO
R2881 75
PJ2881 AKB1111
L (MONO)
VIDEO-3
AUDIO
R
R2884 470k
R2885 470k
PJ2882 AKB1112
B3
1 V
2 GND
3 GND
4 L
5 GND
6 R
A6
AV I/O ASSEMBLY (1/3)
(➡SCH-10)
S-VIDEO
PJ2884 AKP1051
R2883 75
R2882 75
B4
3 C
2 GND
1 Y
A6
FRONT INPUT ASSEMBLY
(AWZ5163) (PRO-97)
Q2841 : DPO BUFFER
(DPO)
PC2841
R2843 330k
R2849 820
Q2841
R2842 1.5k
R2841 5.6k
C2844 33/25
D2842
VR2841 47k
DPO ADJ
R2848 27k
C2848 10/35

SCH-19

W FRONT CONTROL ASSY,
W RECEIVER ASSY,
S FRONT CONTROL ASSY,
S RECEIVER ASSY, FRONT INPUT ASSY

W FRONT CONTROL ASSY,
W RECEIVER ASSY,
S FRONT CONTROL ASSY,
S RECEIVER ASSY, FRONT INPUT ASSY

SCH-19

6. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).
  560 Ω → 56 × 10¹ → 561 ············ RD1/8PM$\boxed{5}\boxed{6}\boxed{1}$J
  47k Ω → 47 × 10³ → 473 ············ RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
  0.5 Ω → 0R5 ············ RN2H$\boxed{0}\boxed{R}\boxed{5}$K
  1 Ω → 010 ············ RS1P$\boxed{0}\boxed{1}\boxed{0}$K
  Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).
  5.62k Ω → 562 × 10¹ → 5621 ············ RN1/4PC$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F
- *Parts marked by ☆ are important parts which relate in X-rays radiation.*
  If any of these parts need to be replaced, always replace with specified parts.
- *Parts marked by × are important parts which relate in X-rays radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself.*
  If any part marked by × is replaced, there is danger of being exposed to X-rays.

- *The model name is indicated with the family name as shown below.*
  The 75 family includes SD-P5075-K, SD-P5575-K and SD-P4575-K.
  The 73 family includes SD-P5073-K and SD-P4573-K.

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
		TUNER-VIDEO ASSEMBLY (FOR 75 FAMILY)	AWV1368
		TUNER-VIDEO ASSEMBLY (FOR 73 FAMILY)	AWV1374
		TUNER-VIDEO ASSEMBLY (FOR PRO-97)	AWV1376
NSP		CONVERGENCE ASSEMBLY	AWV1370
		├ CONVERGENCE ASSEMBLY	AWZ5142
		├ R. CRT DRIVE ASSEMBLY	AWZ5143
		├ G. CRT DRIVE ASSEMBLY	AWZ5144
		└ B. CRT DRIVE ASSEMBLY	AWZ5145
NSP		AV I/O ASSEMBLY (FOR 75 AND 73 FAMILIES)	AWV1371
NSP		AV I/O ASSEMBLY(FOR PRO-97)	AWV1377
		├ AV I/O ASSEMBLY (FOR 75 AND 73 FAMILIES)	AWZ5146
		├ AV I/O ASSEMBLY(FOR PRO-97)	AWZ5227
		├ Y/C SELECTOR ASSEMBLY (FOR 75 AND 73 FAMILIES)	AWZ5147
		├ Y/C SELECTOR ASSEMBLY(FOR PRO-97)	AWZ5228
		├ W FRONT CONTROL ASSEMBLY (FOR 75 AND 73 FAMILIES ONLY)	AWZ5148
		└ W RECEIVER ASSEMBLY (FOR 75 AND 73 FAMILIES ONLY)	AWZ5149
NSP		P IN P ASSEMBLY (FOR 75 FAMILY)	AWV1372
NSP		P IN P ASSEMBLY (FOR 73 FAMILY)	AWV1375
NSP		P IN P ASSEMBLY (FOR PRO-97)	AWV1378
		├ P IN P ASSEMBLY	AWZ5150
		├ P IN P SELECTOR ASSEMBLY	AWZ5151
		├ A CONNECTOR ASSEMBLY	AWZ5152
		├ B CONNECTOR ASSEMBLY	AWZ5153
		├ C CONNECTOR ASSEMBLY	AWZ5154
		├ D CONNECTOR ASSEMBLY	AWZ5155
		├ REGULATOR ASSEMBLY (73 FAMILY AND PRO-97 ONLY)	AWZ5158
		├ PRO S.G. ASSEMBLY (PRO-97 ONLY)	AWZ5159
		├ PRO EXT.SP ASSEMBLY (PRO-97 ONLY)	AWZ5160
		├ S FRONT CONTROL ASSEMBLY (PRO-97 ONLY)	AWZ5161
		├ S RECEIVER ASSEMBLY (PRO-97 ONLY)	AWZ5162
		└ FRONT INPUT ASSEMBLY (PRO-97 ONLY)	AWZ5163
NSP		AUDIO ASSEMBLY(75 FAMILY ONLY)	AWV1373
		├ AUDIO ASSEMBLY(75 FAMILY ONLY)	AWZ5156
		└ EXT SP ASSEMBLY(75 FAMILY ONLY)	AWZ5157
☆		POWER SUPPLY ASSEMBLY	AWV1383
		DOL. PRO. MOD. (75 FAMILY ONLY)	AXQ1009

TUNER-VIDEO ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1302		CXA1124AS
⚠	IC1402		LA4280-P
	IC905		M66320P
	IC601		MC14011BCP
	IC906		MC14051BCP
	IC904		MC14066BCP
	IC902		MC34064P
	IC1301		NJM4558LD
	IC603		NJM7809FAS
	IC903		PD5219A

Mark	No.	Description	Part No.
	IC1401		TA7630P
	IC602		TA8801AN
	IC901		X24C04P
	Q603, Q611, Q613, Q615-Q617, Q625, Q627, Q638, Q640-Q643, Q648, Q652-Q655, Q659-Q661, Q901, Q908, Q909, Q919, Q928-Q930, Q933, Q935, Q937, Q939, Q941, Q943, Q945, Q948-Q952, Q1306, Q1309, Q1409		2SA933S
	Q1302	(PRO-97 ONLY)	2SA933S
	Q601, Q602, Q604, Q607-Q610, Q612, Q614, Q618, Q619, Q621-Q623, Q626, Q631, Q639, Q644-Q646, Q649-Q651, Q656-Q658, Q662, Q663, Q902, Q903, Q907, Q910, Q913, Q917, Q918, Q920-Q927, Q931, Q934, Q936, Q938, Q940, Q942, Q944, Q946, Q947, Q1303, Q1304, Q1307, Q1308, Q1310, Q1311, Q1314, Q1403, Q1404, Q1407, Q1408, Q1410		2SC1740S
	Q628-Q630	(75 AND 73 FAMILIES ONLY)	2SC1740S
	Q670, Q671	(PRO-97 ONLY)	2SC1740S
	Q1411, Q1412		2SC3327
	Q912, Q1305		2SD438
	Q635, Q636, Q637, Q1315		2SK246
	Q664-Q669	(PRO-97 ONLY)	2SK246
	Q620, Q932, Q1312, Q1313		XDC124ES
	Q1301	(PRO-97 ONLY)	XDC124ES
	Q904-Q906, Q911, Q914-Q916		XDC143ES
	D652-D654, D659-D661, D665-D667		11E2
	D601, D603-D606, D608, D610, D612, D618, D619, D625, D626, D628, D630, D632, D633, D638, D642, D646, D648, D651, D655, D656-D658, D662-D664, D668-D673, D675, D676, D678, D679, D686, D906-D910, D912, D913, D915-D917, D919-D923, D930, D950, D964, D966-D970, D972, D976-D987, D1301-D1310, D1313-D1323, D1405, D1409, D1410, D1413-D1425, D1427, D1428, D1434, D1435-D1437		1SS252
	D1429, D1430	(75 FAMILY ONLY)	1SS252
	D1431, D1432	(73 FAMILY AND PRO-97 ONLY)	1SS252
	D607		HZS11A1L
	D609, D611, D613-D617, D620-D624, D627, D629, D631, D634-D637, D639-D641, D643, D644, D647, D925, D932-D939, D952-D954, D989-D991, D1324, D1401-D1404, D1406, D1407, D1433		RD15ESB
	D1312		RD33ESB3
	D1426		RD5.1ESB
	D918		RD5.1ESB2
	D914		RD5.6ESB2
	D1311		RD5.6ESB3
	D901-D905, D911, D924, D926-D929, D931, D940-D949, D951, D955-D963, D965, D971, D973-D975, D988, D992-D1000, D1411, D1412		RD6.8ESB
	D680-D685	(PRO-97 ONLY)	MA700A

SWITCHES

Mark	No.	Description	Part No.
	S1401	(73 FAMILY AND PRO-97 ONLY)	ASH1004
	S1302	RF SWITCH (PRO-97 ONLY)	AXF1034

COILS

Mark	No.	Description	Part No.
	L1401, L1402		ATH-133
	L1301		LAU1R8J
	L901		LAU220K
	L601		LAU390K
	L605-L607		LAU4R7K

CAPACITORS

Mark	No.	Description	Part No.
	TC901	(9.8p to 60p)	ACM-020
	C1490, C1491	(3.3μ/63V) (PRO-97 ONLY)	ACH1127
	C644		CCCCH100D50
	C918		CCCCH120J50
	C917		CCCCH150J50
	C610, C617		CCCCH151J50
	C1333		CCCCH560J50
	C929, C930		CCCSL101J50
	C661-C663		CCCSL121J50
	C664-C666		CCCSL151J50
	C670-C672	(PRO-97 ONLY)	CCCSL220J50
	C627		CCCSL270J50
	C605		CCCSL390J50
	C952		CCCSL680J50
	C606		CCCSL820J50
	C1301-C1304		CCDSL101J50
	C658-C660		CEANP010M50
	C613		CEANP2R2M50
	C1326		CEANPR22M50
	C602, C607, C615, C905, C911, C926, C944-C949, C1335		CEAS010M50
	C1450, C1451	(73 FAMILY AND PRO-97 ONLY)	CEAS010M50
	C904, C922, C1401, C1402, C1430, C1438		CEAS0R1M50
	C604, C639, C641, C645, C653, C656, C673, C901, C925, C931, C934, C943, C1332, C1409-C1412, C1420		CEAS100M50
	C630, C913, C920, C1314		CEAS101M10
	C622, C634, C652, C655, C1336		CEAS101M25
	C612, C1306		CEAS102M16
	C1425		CEAS221M10
	C1429, C1437		CEAS222M35
	C619, C621, C626, C649, C935, C936, C938, C941, C942, C1334, C1338, C1424, C1426		CEAS2R2M50
	C1310, C1311		CEAS330M16
	C667, C1422, C1427		CEAS330M35
	C1320		CEAS331M16
	C1337		CEAS3R3M50
	C1327, C1328		CEAS470M16
	C611, C616, C915, C924, C932, C940, C1403, C1408, C1415		CEAS470M25
	C927, C1423		CEAS470M50
	C614		CEAS471M10
	C1414		CEAS471M16
	C1436		CEAS471M50
	C601, C1312, C1321, C1325, C1331, C1339-C1341		CEAS4R7M50

Mark	No.	Description	Part No.
	C1316		CEAS6R8M50
	C603, C632, C1322, C1418, C1419		CEASR47M50
	C623, C628		CFTXA104J50
	C1406, C1407		CFTXA124J50
	C1342		CFTXA473J50
	C642, C903, C908, C910, C912, C916, C950		CKCYB103K50
	C907		CKCYB222K50
	C928		CKCYB471K50
	C1404, C1405		CKCYB562K50
	C638		CKCYF103Z50
	C657		CKCYF222Z50
	C618, C902, C906, C909, C914, C919, C923, C933, C937, C939		CKCYF473Z50
	C1309		CKCYX473M25
	C1305, C1317		CKDYB102K50
	C1313		CKDYB471K50
	C1308, C1329		CKDYF103Z50
	C608, C1343, C1345, C1413, C1431-C1435, C1439		CKDYF473Z50
	C625, C629		CKDYX103M25
	C643		CKDYX104M25
	C624, C631		CKDYX473M25
	C1421, C1428		CKMYB151K50
	C1416, C1417		CKMYB561K50
	C620, C1307		CQMA103J50
	C1324		CQMA123J50
	C635, C1318, C1319		CQMA124J50
	C651		CQMA183J50
	C636, C640		CQMA223J50
	C1330		CQMA272J50
	C646		CQMA472J50
	C1323		CQMA562J50
	C1315		CQMA563J50
	C609		CQMA681J50

RESISTORS

Mark	No.	Description	Part No.
	VR601	(100Ω)	ACP1037
	VR602	(220Ω)	ACP1038
	VR603	(4.7kΩ)	ACP1042
	VR1301	(10kΩ)	ACP1043
	VR1304	(22kΩ)	ACP1044
	VR1303	(47kΩ)	ACP1045
	VR1305	(22kΩ)	VRTB6VS223
	R1058		RA6T153J
	R816, R817, R832-R834		RD1/2PM100J
	R1434, R1437		RD1/2PM152J
	R815		RD1/2PM270J
	R827-R829		RD1/2PM271J
	R1333		RD1/2PMFL680J
	R1332		RD1/2PMFL8R2J
	R982		RD1/4PM102J
	R901, R902, R986, R989, R1101		RD1/4PM221J
	R928		RD1/4PM471J
	R1435, R1440		RD1/4PMFL100J
⚠	R1405		RD1/4PMFL150J
⚠	R1436, R1438		RD1/4PMFL2R2J
	R621, R923, R926		RD1/4PMFL3R9J
⚠	R1059		RD1/4PMFL3R9J

Mark	No.	Description	Part No.
	R943		RN1/4PC2202F
	R1360		RN1/4PC3301F
	R933	(75 FAMILY)	RN1/4PC3901F
	R933	(73 FAMILY)	RN1/4PC6801F
	R933	(PRO-97)	RN1/4PC3301F
	R1366		RN1/4PC4302F
	R1369, R1371		RN1/4PC4702F
	R932	(75 FAMILY)	RN1/4PC6801F
	R932	(73 FAMILY)	RN1/4PC3301F
	R932	(PRO-97)	RN1/4PC6802F
	R1359		RN1/4PC6801F
⚠	R662		RS2LMF3R3J
⚠	R622		RS2LMF4R7J
⚠	R1313		RS2LMF560J
	Other Resistors		RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X601	CERAMIC RESONATOR(503KHz)	ASS1019
	X602	CRYSTAL RESONATOR(3.579545MHz)	ASS1020
	X901	CERAMIC RESONATOR(4.19MHz)	ASS1022
	SP1401	4P SPEAKER TERMINAL (75 AND 73 FAMILIES ONLY)	AKE1012
	HJ901, HJ902	MINI JACK	AKN-207
		COAXIAL WIRE ASSEMBLY (75 AND 73 FAMILIES ONLY)	ADE1129
		COAXIAL WIRE WITH PIN PLUG (PRO-97 ONLY)	ADE-050
		SCREW	BBZ30P080FCU
		TV FRONT END + IF PACK	AXF1062
	PJ1401	2P PIN JACK (73 FAMILY ONLY)	AKB1146
	PJ1401	2P PIN JACK (PRO-97 ONLY)	AKB1151

CONVERGENCE ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC2316		M5228P
	IC2312, IC2313, IC2315, IC2319-IC2321, IC2603		M5238LF
	IC2302		NJM78M05FAS
	IC2301		NJM79M05FA
	IC2303, IC2304		PA0053A
	IC2305, IC2306		PM0002A
⚠	IC2601		STK4274
	IC2307		STK4277-SL
	IC2311		TC4053BP
	IC2310, IC2602		TC4066BP
	Q2301, Q2606		2SA933S
	Q2302-Q2306, Q2601-Q2603		2SC1740S
	D2301, D2302, D2309, D2313, D2315, D2317, D2389, D2391-D2393, D2606-D2610		1SS252
	D2316		HSS104-02
	D2310-D2312, D2318, D2319, D2325-D2330, D2332-D2343, D2346, D2348, D2350, D2352, D2355-D2363, D2365-D2367, D2370-D2380, D2382-D2388, D2394-D2396, D2601-D2605, D2611-D2614		RD12ESB

Mark	No. Description	Part No.
	D2398	RD20ESB
	D2314	RD4.7ESB2
	D2303-D2308, D2324, D2331, D2345, D2354	RD6.8ESB

CAPACITORS

	C2346, C2347, C2382, C2383	CCCCH101J50
	C2609	CCDSL271J50
	C2348	CCMSL470J50
	C2308, C2339-C2341, C2345, C2375, C2381, C2386, C2432	CEAS010M50
	C2611	CEAS100M50
	C2313, C2322, C2613, C2622	CEAS101M10
	C2303-C2305, C2323, C2344, C2349, C2355, C2356, C2393, C2394, C2396, C2397, C2424, C2426, C2615, C2621	CEAS101M25
	C2612	CEAS220M25
	C2307, C2312, C2366, C2372	CEAS221M10
	C2376, C2377	CEAS330M35
	C2320, C2321, C2330, C2335, C2357, C2358, C2367, C2371	CEAS331M6
	C2378	CEAS470M25
	C2379	CEAS4R7M50
	C2342	CEASR47M50
	C2301, C2302	CEHAQ330M35
	C2405-C2408, C2601-C2604	CEHAQ471M35
	C2610	CKCYB681K50
	C2306, C2309, C2315-C2319, C2324, C2325, C2327-C2329, C2331-C2334, C2336, C2337, C2350-C2353, C2361, C2362, C2364, C2365, C2368-C2370, C2385, C2387-C2392, C2409-C2412, C2425, C2427, C2428, C2605-C2608, C2617-C2620	CKCYF473Z50
	C2314	CKDYF473Z50
	C2326	CQMA102J50
	C2310	CQMA103J50
	C2380	CQMA104J50
	C2311	CQMA222J50
	C2359, C2374	CQMA224J50
	C2338, C2343	CQMA471J50

RESISTORS

	VR2301-VR2303, VR2310-VR2312 (4.7kΩ)	ACP1042
	VR2304, VR2313 (10kΩ)	ACP1043
	VR2305, VR2307, VR2308, VR2315, VR2602 (47kΩ)	ACP1045
	VR2306, VR2314 (220kΩ)	ACP1047
	VR2601 (470Ω)	VRTS6VS471
	R2563	RD1/2PM271J
⚠	R2518, R2520, R2603, R2604	RD1/2PMFL220J
	R2610	RN1/4PC1001F
⚠	R2301, R2302	RS1LMF8R2J
⚠	R2532, R2536	RS2LMF2R2J
⚠	R2511, R2519	RS2LMFR47J
⚠	R2613	RS3LMF010J
⚠	R2531, R2543	RS3LMF3R3J
⚠	R2539, R2541	RS3LMF4R7J
⚠	R2540, R2547, R2601, R2602, R2612	RS3LMF6R8J
	Other Resistors	RD1/8PM☐☐☐J

OTHERS

	BINDER	AEP-215
	SCREW	ABA1056
	SCREW	BBZ30P080FCU
	SCREW	BBZ30P080FZK
	SCREW	PBZ30P080FMC
	BINDER	AEC-826

R.CRT DRIVE ASSEMBLY

SEMICONDUCTORS

	Q2701	2SC4001
	D2702	11E2
	D2701	1SS252

COILS

	L2703	LAU101K
	L2701, L2702	LAU470K

CAPACITORS

	C2704 (1000P, 2kV)	ACG1001
	C2703 (4.7μ, 250V)	ACH-378
	C2701	CEAS101M10
	C2702	CKCYB681K50

RESISTORS

	R2705 (47Ω, 1/2W)	ACN-225
	R2702 (1kΩ, 1/2W)	ACN1006
⚠	R2703, R2704	RS3LMF332J
	Other Resistors	RD1/8PM☐☐☐J

OTHERS

	CRT SOCKET	AKG1004
	SCREW	PMB30P100FMC

G.CRT DRIVE ASSEMBLY

SEMICONDUCTORS

	Q2731	2SC4001
	D2732	11E2
	D2731	1SS252

COILS

	L2733	LAU101K
	L2731, L2732	LAU470K

CAPACITORS

	C2734 (1000P, 2kV)	ACG1001
	C2733 (4.7μ, 250V)	ACH-378
	C2731	CEAS101M10
	C2732	CKCYB681K50

RESISTORS

	R2735 (47Ω, 1/2W)	ACN-225
	R2732 (1kΩ, 1/2W)	ACN1006
⚠	R2733, R2734	RS3LMF332J
	Other Resistors	RD1/8PM☐☐☐J

OTHERS

	CRT SOCKET	AKG1004
	SCREW	PMB30P100FMC

B.CRT DRIVE ASSEMBLY

SEMICONDUCTORS

Mark	No. Description	Part No.
	Q2761	2SC4001
	D2762	11E2
	D2761	1SS252

COILS

Mark	No. Description	Part No.
	L2763	LAU101K
	L2761, L2762	LAU470K

CAPACITORS

Mark	No. Description	Part No.
	C2764 (1000P, 2kV)	ACG1001
	C2763 (4.7μ, 250V)	ACH-378
	C2761	CEAS101M10
	C2762	CKCYB681K50

RESISTORS

Mark	No. Description	Part No.
	R2765 (47Ω, 1/2W)	ACN-225
	R2762 (1kΩ, 1/2W)	ACN1006
⚠	R2763, R2764	RS3LMF332J
	Other Resistors	RD1/8PM□□□J

OTHERS

Mark	No. Description	Part No.
	CRT SOCKET	AKG1004
	SCREW	PMB30P100FMC

AV I/O ASSEMBLY

SEMICONDUCTORS

Mark	No. Description	Part No.
	IC1801	TC74HC4538AP
	IC1802	MC74HC4040N
	IC1604	NJM7805FAS
	IC1605	NJM79M05FA
	IC1852	PA0030
	IC1731	PD5218A
	IC1804	TC4013BP
	IC1601-IC1603	TC4051BP
	IC1803	TC74HC04AP
	Q1604, Q1607, Q1608, Q1616, Q1621, Q1801, Q1802, Q1806, Q1849, Q1850, Q1853, Q1857-Q1859, Q1862, Q1863, Q1865-Q1869, Q1874-Q1876	2SA933S
	Q1601-Q1603, Q1605, Q1606, Q1609-Q1615, Q1617-Q1620, Q1622-Q1624, Q1626, Q1731, Q1733, Q1734, Q1803-Q1804, Q1807, Q1860, Q1861, Q1864, Q1870-Q1873, Q1877-Q1889	2SC1740S
	Q1805	RN1201
	Q1856	2SK246
	Q1735	XDC143ES
	D1601-D1604, D1735, D1737, D1739, D1740, D1744, D1745, D1748-D1752, D1803-D1823, D1828, D1830-D1837, D1846-D1852, D1854-D1862	1SS252
	D1731-D1734, D1736, D1738, D1741, D1742, D1743, D1746, D1747, D1801, D1802, D1824, D1825-D1827	RD6.8ESB

COILS

Mark	No. Description	Part No.
	L1601	ATH1046
	L1731	LAU2R2K
	L1851	LAU680K

CAPACITORS

Mark	No. Description	Part No.
	C1874	CCCSL101J50
	C1849, C1850	CCCSL270J50
	C1873	CCCSL330J50
	C1865	CCCSL560J50
	C1867	CCCSL820J50
	C1812	CCDCH560J50
	C1855	CEANP010M50
	C1866	CEAS010M50
	C1734, C1739	CEAS0R1M50
	C1626, C1741, C1871	CEAS100M50
	C1602, C1606, C1610, C1614-C1616, C1618, C1623, C1641, C1736, C1872	CEAS101M10
	C1740	CEAS101M16
	C1603, C1609, C1854, C1860, C1862, C1864, C1869	CEAS101M25
	C1601, C1608	CEAS102M10
	C1612	CEAS221M16
	C1620, C1625, C1627, C1637-C1640	CEAS2R2M50
	C1604, C1858, C1861, C1863, C1868, C1876	CEAS330M35
	C1851	CEAS331M16
	C1802, C1804, C1807, C1810	CEAS470M16
	C1628, C1629, C1633	CEAS471M10
	C1634	CEHAQ101M10
	C1619	CEHAQ2R2M50
	C1738	CKCYB561K50
	C1605, C1607, C1611, C1613, C1617, C1621, C1622, C1624	CKCYF103Z50
	C1630-C1632, C1636, C1737	CKCYF473Z50
	C1870	CKDYB103K50
	C1801, C1803, C1806, C1809	CKDYF473Z50
	C1733	CQMA102J50
	C1805, C1808	CQMA471J50
	C1813	CQPA362F100
	C1811	CQPA152J100

RESISTORS

Mark	No. Description	Part No.
	VR1801, VR1812 (10kΩ)	VRTS6VS103
	R1763	RA8T103J
	R1761, R1762	RA9T103J
	R1634, R1666	RD1/2PM221J
	R1651, R1690, R1718	RD1/2PMFL3R9J
⚠	R1711	RD1/2PMFL3R9J
	R1652, R1689, R1719	RD1/2PMFL6R8J
	R1691	RD1/4PM221J
⚠	R1851	RD1/4PMFL3R9J
	R1803	RN1/4PC4701F
	R1806	RN1/4PC1202F
⚠	R1668	RS1LMF3R9J
⚠	R1704	RS3LMF180J
⚠	R1697	RS3LMF010J
	Other Resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X1732	CERAMIC RESONATOR (8.00MHz)	ASS1015
	X1731	CERAMIC OSCILLATOR (12MHz)	ASS1062
	DL1852	DELAY LINE	ATN1014
	CN1608	12P PIN JACK (FOR 75 AND 73 FAMILIES)	AKB1094
	CN1608	12P PIN JACK (FOR PRO-97)	AKB1114
	CN1609	3P PIN JACK (FOR 75 AND 73 FAMILIES)	AKB1102
	CN1609	3P PIN JACK (FOR PRO-97)	AKB1137
	SCREW		PBZ30P080FMC

Y/C SELECTOR ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC2151		TC4052BP
	Q2157, Q2159, Q2163, Q2164		2SA933S
	Q2151-Q2156, Q2158, Q2160-Q2162, Q2165, Q2166		2SC1740S
	D2151, D2152		1SS252
	D2153-D2155		RD12ESB

CAPACITORS

Mark	No.	Description	Part No.
	C2151, C2154, C2155, C2158-C2160, C2163, C2165		CEAS101M10
	C2164		CEAS101M25
	C2152, C2153, C2156, C2157, C2161, C2162		CKCYF103Z50

RESISTORS

Mark	No.	Description	Part No.
	R2172, R2200		RD1/2PMFL3R9J
	R2171, R2220		RD1/2PMFL6R8J
	R2196, R2197		RD1/2PM221J
	Other Resistors		RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	CN2151	4P MINI DIN SOCKET (FOR 75 AND 73 FAMILIES)	AKP1065
	CN2151	4P MINI DIN SOCKET (FOR PRO-97)	AKP1066

W FRONT CONTROL ASSEMBLY (75 AND 73 FAMILIES ONLY)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC2801		PD5136
	Q2801-Q2805		2SC1740S
	D2801, D2805, D2806, D2808-D2812		1SS252
	D2802		RD15ESB
	D2803, D2804		RD20ESB
	D2807		RD3.0ESB

SWITCHES

Mark	No.	Description	Part No.
	S2801-S2812		ASG1034

CAPACITORS

Mark	No.	Description	Part No.
	C2809, C2810		CCDCH221J50
	C2814		CEAS101M10
	C2813		CEAS2R2M50
	C2803		CEAS470M25
	C2811		CFTXA104J50
	C2815		CKDYB472K50
	C2804, C2812		CKDYF473Z50

RESISTORS

Mark	No.	Description	Part No.
⚠	R2822		RD1/2PMF101J
⚠	R2835		RD1/2PMF820J
	Other Resistors		RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X2801	CERAMIC OSILLATOR(480kHz)	ASS1043
	PJ2803	1P PIN JACK	AKB1055
	PJ2801	1P PIN JACK	AKB1056
	PJ2802	1P PIN JACK	AKB1057
	PJ2804	4P MINI DIN SOCKET	AKP1081

W RECEIVER ASSEMBLY (75 AND 73 FAMILIES ONLY)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q2865		2SC1740S
	D2865		AEL1011
	PC2865		U5C-08SC

CAPACITORS

Mark	No.	Description	Part No.
	C2866		CCMSL121J50
	C2867		CEJA100M35
	C2865		CEJA330M25

RESISTORS

Mark	No.	Description	Part No.
	VR2865(47kΩ)		ACP1045
	Other Resistors		RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
	X2865	REMOTE RECEIVER UNIT	AXX1033
	DPO HOLDER		AMR2294

P IN P ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC3002		MB3511P
	IC3006		MB40176PF
	IC3005		MB81C1501PF
	IC3004		MB86153BPF
	IC3201		MC141621FU
	IC3202		TC4066BP
	IC3003		TC4094BP
	Q3003, Q3008, Q3010-Q3012, Q3014, Q3015, Q3017, Q3208, Q3209, Q3212, Q3213		2SA933S
	Q3001, Q3002, Q3004-Q3007, Q3009, Q3013, Q3016, Q3018, Q3019, Q3201, Q3202, Q3204-Q3207, Q3210, Q3211, Q3214-Q3221		2SC1740S
	D3005-D3007, D3011, D3012, D3201-D3212, D3215-D3218		1SS252
	D3219		RD15ESB
	D3001-D3004		RD5.6ESB
	D3008-D3010, D3013		RD6.8ESB

Mark	No. Description	Part No.
COILS		
	L3002, L3014, L3018, L3020, L3021	ATX1008
	L3024, L3212	LAU100K
	L3017	LAU101K
	L3008	LAU151K
	L3015	LAU220K
	L3016, L3022, L3023, L3025, L3203-L3205, L3210, L3211	LAU2R2J
	L3201, L3202, L3206-L3209	LAU8R2K
	L3009, L3019	LAUR22J
CAPACITORS		
	C3070	CCCCH270J50
	C3014, C3046	CCCCH680J50
	C3016, C3018, C3043, C3044	CCDCH150J50
	C3020, C3040	CCDCH180J50
	C3027, C3037, C3041	CCDSL100D50
	C3012, C3023, C3033, C3047, C3058, C3060, C3062, C3064, C3202, C3204, C3223, C3224, C3228, C3229	CCDSL101J50
	C3010, C3203, C3226, C3227	CCDSL221J50
	C3052, C3086	CCDSL470J50
	C3025, C3067, C3080-C3082, C3231	CEAS010M50
	C3013, C3017, C3059, C3061, C3209, C3214, C3218	CEAS100M50
	C3003, C3004, C3007, C3035, C3048, C3050, C3056, C3073, C3074, C3077, C3089, C3238, C3239	CEAS101M10
	C3001, C3005, C3006, C3232, C3235, C3241	CEAS101M25
	C3083, C3207, C3213, C3221	CEAS102M6
	C3054, C3072	CEAS221M10
	C3201	CEAS221M16
	C3063, C3066	CEAS2R2M50
	C3230	CEAS330M35
	C3021, C3039	CEAS3R3M50
	C3002, C3009, C3205, C3233, C3234	CEAS470M25
	C3053, C3084	CEAS471M10
	C3011	CEAS471M16
	C3032, C3222	CEASR22M50
	C3026	CEASR33M50
	C3022, C3028, C3210	CEASR47M50
	C3019, C3042	CKCYB102K50
	C3216, C3225	CKCYF102Z50
	C3015, C3045, C3220, C3237	CKCYF103Z50
	C3029, C3031, C3034, C3036, C3038, C3049, C3051, C3071, C3075, C3076, C3085, C3088, C3206, C3208, C3212, C3215, C3217, C3219, C3236, C3240	CKCYF473Z50
	C3008, C3055	CKCYX473M16
	C3057, C3079, C3242, C3243	CKDYB103K50
	C3078	CKDYF473Z50
	C3024, C3030	CQMA103J50
	C3065	CQMA104J50
	C3069	CQMA122J50
	C3211	CQMA472J50
	C3068	CQMA822J50

Mark	No. Description	Part No.
RESISTORS		
	VR3001 (47kΩ)	VRTB6VS473
⚠	R3011	RD1/2PMFL100J
⚠	R3007	RD1/2PMFL3R9J
	R3097, R3098, R3259	RD1/2PMFL3R9J
	R3005	RN1/4PC1500F
	R3078	RN1/4PC2202F
	R3210, R3247	RN1/4PC2700F
	R3004	RN1/4PC3300F
	R3245	RN1/4PC47R0F
	R3209	RN1/4PC82R0F
	Other Resistors	RD1/8PM☐☐☐J
OTHERS		
	X3001, X3002 CRYSTAL RESONATOR	ASS1056
	SHIELD CASE	ANK1202
	SHIELD PLATE	ANK1203

P IN P SELECTOR ASSEMBLY

Mark	No. Description	Part No.
SEMICONDUCTORS		
	IC2201	TC4051BP
	Q2207	2SA933S
	Q2201-Q2206	2SC1740S
	D2201	1SS252
CAPACITORS		
	C2201, C2203, C2205	CEAS101M10
	C2202, C2204, C2206, C2207	CKCYF103Z50
RESISTORS		
	All Resistors	RD1/8PM☐☐☐J

A CONNECTOR ASSEMBLY

A CONNECTOR assembly has not service parts.

B CONNECTOR ASSEMBLY

B CONNECTOR assembly has not service parts.

C CONNECTOR ASSEMBLY

C CONNECTOR assembly has not service parts.

D CONNECTOR ASSEMBLY

D CONNECTOR assembly has not service parts.

REGULATOR ASSEMBLY (73 FAMILY AND PRO-97 ONLY)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	Q2252		2SC1740S
	Q2251		2SD1276A
	D2251		RD5.6ESB1

CAPACITORS

Mark	No.	Description	Part No.
	C2255		CEAS100M50
	C2251, C2254		CEAS471M50
	C2253		CKCYF473Z50
	C2252		CKMYB561K50

RESISTORS

Mark	No.	Description	Part No.
	R2251		RD1/2PMFL221J
	R2252		RN1/4PC2702F
	R2253		RN1/4PC6201F
		Other Resistors	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
		SCREW	BBZ30P080FCU

PRO S.G. ASSEMBLY (PRO-97 ONLY)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC2226		NJM4558DXP
	Q2226		2SC1740S

CAPACITORS

Mark	No.	Description	Part No.
	C2227, C2228		CEAS101M10
	C2226, C2229		CEAS101M50
	C2232		CKCYF102Z50
	C2230		CKDYF473Z50

RESISTORS

Mark	No.	Description	Part No.
		All Resistors	RD1/8PM☐☐☐J

PRO EXT. SP ASSEMBLY (PRO-97 ONLY)

OTHERS

Mark	No.	Description	Part No.
		4P SPEAKER TERMINAL	AKE1030

S FRONT CONTROL ASSEMBLY (PRO-97 ONLY)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC2841		PD5136
	PC2841		U5C-08SC
	Q2841		2SC1740S
	D2843, D2844		1SS252
	D2842		AEL-459
	D2841		RD3.0ESB

SWITCHES

Mark	No.	Description	Part No.
	S2841-S2852		ASG1034

CAPACITORS

Mark	No.	Description	Part No.
	C2841, C2842		CCDCH221J50
	C2848		CEJA100M35
	C2846		CEJA2R2M50
	C2844		CEJA330M25
	C2843		CFTXA104J50
	C2847		CKDYB472K50
	C2845		CKDYF473Z50

RESISTORS

Mark	No.	Description	Part No.
	VR2841	(47kΩ)	VRTB6VS473
	R2857		RD1/2PMF820J
		Other Resistors	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
	X2841	CERAMIC RESONATOR(480kHz)	ASS1043

S RECEIVER ASSEMBLY (PRO-97 ONLY)

CAPACITORS

Mark	No.	Description	Part No.
	C2872		CCMSL121J50
	C2871		CEJA101M10

RESISTORS

Mark	No.	Description	Part No.
		All Resistors	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
	X2871	REMOTE RECEIVER UNIT	AXX1033

FRONT INPUT ASSEMBLY (PRO-97 ONLY)

RESISTORS

Mark	No.	Description	Part No.
		All Resistors	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
	PJ2881	1P PIN JACK	AKB1111
	PJ2882	1P PIN JACK	AKB1112
	PJ2883	1P PIN JACK	AKB1113
	PJ2884	4P MINI DIN SOCKET	AKP1051

AUDIO ASSEMBLY (75 FAMILY ONLY)

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC405		LA4280-P
	IC404		NJM4558LD
	IC403		PA0049
	IC401		TA7630P
	IC402		TC4066BP
	IC406		TC4094BP
	Q403		2SA933S
	Q404, Q406, Q407, Q416, Q417, Q419		2SC1740S
	Q408-Q411, Q414, Q415		2SC2458
	Q412, Q413		2SC3327

Mark	No.	Description	Part No.
⚠	Q418		2SD1276A
	Q401, Q402, Q405		RN1203
	D404, D406, D415-D417, D422, D425-D434, D441-D444, D455-D458, D460-D463		1SS252
	D401-D403, D405, D407, D409-D414, D418-D420, D436-D440, D451, D452		RD15ESB
	D408		RD5.1ESB2
	D435		RD5.6ESB1
	D423, D424		RD6.8ESB

SWITCHES

Mark	No.	Description	Part No.
	S402		ASH1001
	S401		ASH1004

COILS

Mark	No.	Description	Part No.
	L401, L402		ATH-133

CAPACITORS

Mark	No.	Description	Part No.
	C470, C477		CEAS0R1M50
	C414-C416, C418, C474, C483		CEAS100M50
	C432		CEAS101M10
	C401		CEAS101M25
	C480		CEAS221M10
	C481, C482		CEAS222M35
	C402, C404, C422, C423, C425, C426, C460, C461, C464, C465		CEAS2R2M50
	C463, C466, C479		CEAS330M35
	C405, C412, C431		CEAS470M25
	C459		CEAS470M50
	C420		CEAS471M10
	C419, C424		CEAS471M16
	C473, C486, C487		CEAS471M50
	C438, C439, C442		CEAS4R7M50
	C440		CEAS6R8M50
	C428, C436, C444, C449, C450		CEASR47M50
	C437		CFTXA103J50
	C441, C454		CFTXA104J50
	C452, C453		CFTXA123J50
	C409, C410		CFTXA124J50
	C443, C445		CFTXA223J50
	C446		CFTXA224J50
	C456		CFTXA273J50
	C406, C407		CKCYB562K50
	C403, C408, C417, C421, C427, C435, C468, C469, C471, C472, C475, C476, C478, C485, C488, C489		CKCYF473Z50
	C462, C467		CKMYB151K50
	C433, C434, C484		CKMYB561K50
	C429, C430		CQMA102J50
	C451		CQMA152J50
	C455		CQMA272J50
	C447		CQMA562J50
	C448		CQMA563J50
	C457		CQMA681J50
	C458		CQMA682J50

RESISTORS

Mark	No.	Description	Part No.
	R518, R520		RD1/2PM471J
⚠	R401		RD1/2PMFL100J
	R522		RD1/2PMFL221J
⚠	R457		RD1/2PMFL3R9J
	R514, R515		RD1/4PMFL100J
⚠	R508, R511		RD1/4PMFL2R2J
	R524		RN1/4PC3002F
	R523		RN1/4PC6201F
		Other Resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Part No.
		2P PIN JACK	AKB1126
		SCREW	VBZ30P080FMC

EXT SP ASSEMBLY (75 FAMILY ONLY)

OTHERS

Mark	No.	Description	Part No.
		4P SPEAKER TERMINAL	AKE1019
	CN8012	2P SPEAKER TERMINAL	AKE1032

POWER SUPPLY ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC201, IC301		NJM4558DXP
⚠	IC101, IC102		PC817CD
	Q204, Q206, Q305, Q306		2SA1145
	Q101, Q107, Q111, Q201		2SA933S
×NSP	Q301, Q302		
	Q102, Q103, Q108, Q113, Q114, Q202, Q209, Q211, Q303		2SC1740S
×NSP	Q303		
	Q109, Q203, Q215		2SC2705
×NSP	Q304		
⚠	Q207		2SC3181N
	Q205, Q307		2SC3332
⚠	Q210		2SC4256
⚠	Q110, Q112, Q308		2SD1276A
	Q105, Q106		2SD1835
⚠	Q208, Q309		2SD2300
⚠	Q104		2SK1168
	D213, D306		11DF2FD
⚠	D101, D102, D104, D105		1SS145
	D107, D108, D115-D122, D125, D126, D137, D139-D145, D203-D211, D217-D223, D304, D305, D311, D312		1SS252
⚠	D303		1SS252
	D214, D307		ES1F
⚠	D130, D131		FMP-G12S
	D135, D138		HZS18-1L
	D134, D136		HZS6B1L
	D146, D147		HZS18L
⚠	D103		HZS6B1L
	D124		HZS6C2L
⚠	D106		RBV-604
	D215, D216, D309, D310		RD12ESB

Mark	No.	Description	Part No.
	D201		RD39ESB4
	D202		RD5.1ESB
×NSP	D301,D302		
	D133		RD5.1ESB3
⚠	D128		RL2Z
⚠	D127,D129		RL4Z
	D308		RU1
⚠	D132		RU4A

TRANSFORMERS AND COILS

Mark	No.	Description	Part No.
⚠	T102	CONVERTER TRANSFORMER	ATK1079
⚠	T101	POWER TRANSFORMER	ATT1194
	T201,T301	H.DRIVE TRANSFORMER	ATK1045
⚠×NSP	T302	FBT	
	L101,L102	LINE FILTER	ATF1118
	L103	AF CHOKE COIL	ATH-133
	L201	DUMMY FBT COIL	ATL1053
	L202	LINEARITY COIL	ATL1089
	L104-L111	FERRITE BEAD	ATX1023
	L301	INDUCTOR	LTA272J

CAPACITORS

Mark	No.	Description	Part No.
	C101,C102	(0.1µ,250V)	ACE-507
⚠	C105,C106,C108,C109	(6800P,250V)	ACE1009
	C132	(100P,2kV)	ACG-032
	C119	(2200P,2kV)	ACG-039
	C110,C111,C113,C114	(0.01µ,250V)	ACG-501
	C222	(680P,2kV)	ACG1024
⚠	C323	(680P,2kV)	ACG1024
	C122-C124,C152,C231,C232	(4700P,2kV)	ACG1028
	C120	(4.7µ,250V)	ACH-378
	C319	(10µ,160V)	ACH1117
⚠	C219	(10µ,160V)	ACH1117
	C135	(560µ,160V)	ACH1146
⚠	C116	(470µ,200V)	ACH1147
⚠	C118	(820µ,200V)	ACH1148
	C136	(3300µ,50V)	ACH1165
	C218		CCCSL101K500
	C228		CCCSL181K500
	C214,C312,C314,C317		CCDSL101J50
	C129-C131		CCDSL221K500
	C215		CEAS010M100
	C127,C202,C205		CEAS010M50
	C112,C145,C146,C304,C321		CEAS100M50
	C103		CEAS102M25
	C207		CEAS221M16
	C234		CEAS471M10
	C107,C115,C153		CEAS470M25
	C148,C217,C306		CEHAQ010M50
	C211,C310		CEHAQ100M2C
	C149,C203,C204,C327		CEHAQ100M50
	C128		CEHAQ102M16
	C313		CEHAQ220M16
	C325		CEHAQ220M25
	C322		CEHAQ220M2C
	C305,C309		CEHAQ221M10
	C150,C302		CEHAQ221M16
	C134		CEHAQ222M35
	C213		CEHAQ330M16
	C142		CEHAQ331M35
	C133,C137		CEHAQ332M35
	C138		CEHAQ471M16
	C318		CEHAQ4R7M50
	C324		CFPHW123H3D
	C225		CFPHW153H3D
	C226		CFPMW185J2D
	C320		CKCYB102K50
	C216		CKCYB102K500
	C301		CKCYB222K50
	C210		CKCYB331K500
	C316		CKCYB392K500
	C308		CKCYB561K50
	C147		CKCYB681K50
	C104,C307,C311		CKCYF103Z50
	C315		CKCYF222Z500
	C140,C141,C144,C151,C303,C326		CKCYF473Z50
	C212		CKDYF103Z50
	C139,C143		CKDYF103Z500
	C201		CKDYF473Z50
	C126		CQMA102J50
	C209		CQMA103J50
	C206		CQMA223J50
	C227		CQMA333J50
	C208		CQMA471J50
	C121,C125		CQMA473J50
	C221		CQMA474J50
	C223,C224		CQPA333J200

RESISTORS

Mark	No.	Description	Part No.
	VR101,VR301	(1kΩ)	VRTS6VS102
×NSP	VR302	(22kΩ)	
⚠	R102,R103	(2.2MΩ,1/2W)	ACN-208
	R349	(47Ω,1/2W)	ACN-225
	R247	(33kΩ,1/2W)	ACN1011
⚠	R145,R158,R159	(1Ω,5W)	ACN1032
	R346		RD1/2PM122J
	R249		RD1/2PM152J
	R328		RD1/2PM182J
×NSP	R327		
	R321		RD1/2PM391J
	R250-R252		RD1/2PM470J
×NSP	R337		
	R240		RD1/2PMFL103J
	R229		RD1/2PMFL123J
⚠	R326		RD1/2PMFL221J
	R336		RD1/2PMFL222J
	R256		RD1/2PMFL223J
	R123,R167		RD1/2PMFL470J
⚠	R234		RD1/2PMFL470J
	R235		RD1/2PMFL473J
	R166		RD1/2PMFL470J
	R126		RD1/2PMFL683J
×NSP	R307		
	R258		RD1/4PMFL102J

Mark	No. Description	Part No.
⚠	R344	RD1/4PMFL2R2J
	R218, R253	RD1/4PMFL3R9J
⚠	R204, R302, R314	RD1/4PMFL3R9J
⚠	R222, R320	RD1/4PMFL470J
	R257, R236, R338	RD1/4PMFL471J
	R232	RD1/4PMFL682J
⚠	R347, R348	RN1/2PC3602F
×NSP	R340	
	R134, R136	RN1/4PC1603F
	R156	RN1/4PC2101F
	R157	RN1/4PC2431F
	R133	RN1/4PC3601F
⚠	R239	RS1LMF010J
⚠	R144	RS1LMF272J
⚠	R118	RS1LMF473J
⚠	R351	RS1LMFR22J
⚠	R141	RS2LMF223J
⚠	R230	RS3LMF010J
⚠	R241, R242, R245	RS3LMF104J
⚠	R343	RS3LMF151J
⚠	R209	RS3LMF153J
⚠	R168, R169	RS3LMF1R5J
⚠	R329	RS3LMF472J
⚠	R119, R120	RS3LMFR22J
⚠	R341	RS3LMFR47J
⚠	R331	RS3LMFR68J
⚠	R128, R129	RT10PD180K
×NSP	R304	
×NSP	R305, R308, R315	
×NSP	R312	
×NSP	R317	
×NSP	R318	
×NSP	R309, R313	
×NSP	R306, , R319	
×NSP	R316	
×NSP	R342	
	Other Resistors	RD1/8PM□□□J

OTHERS

Mark	No. Description	Part No.
⚠	RY101, RY102 RELAY	ASR1036
	CN203-CN205 6P PLUG	AKM1072
⚠	FU101 FUSE (8A/125V)	AEK1002
	SCREW	ABA-234
	SCREW	BBZ30P080FCU
	SCREW	PBZ30P080FMC
	SCREW	VPZ40P100FMC
	MICA SHEET	AEP-056

DOL.PRO.MOD. (75 FAMILY ONLY)

SEMICONDUCTORS

Mark	No. Description	Part No.
	IC1901	LA2780
	IC1903	LM3364K-15
	IC1902	LV1001M-A
	IC1906	M66320FP
	IC1904, IC1905	NJM4558M-D
	Q1903	2SD438
	Q1901	DTA143EK
	Q1902	DTC143EK
	D1901-D1905	1SS226

CAPACITORS

Mark	No. Description	Part No.
	C1938, C1964	CCSCH102J50
	C1971-C1973	CCSQCH101J50
	C1940, C1962	CCSQCH151J50
	C1953	CCSQCH471J50
	C1906, C1922, C1934, C1959	CCSQCH681J50
	C1909, C1910, C1917, C1918	CEANL2R2M50
	C1950	CEANP100M35
	C1956	CEANPR33M50
	C1951	CEAS010M50
	C1903, C1904, C1926, C1927, C1952, C1957, C1958, C1960	CEAS100M50
	C1902	CEAS101M10
	C1928, C1929	CEAS220M16
	C1968	CEAS221M10
	C1941-C1943	CEAS221M16
	C1930, C1931	CEAS2R2M50
	C1901	CEAS470M25
	C1936	CEAS471M16
	C1937, C1965	CEAS4R7M50
	C1911, C1916	CEASR15M50
	C1945	CEASR22M50
	C1912, C1915	CEYA3R3M50
	C1905, C1925	CEYAR33M50
	C1933	CFTXA103J50
	C1907, C1908, C1920, C1923, C1924, C1935	CFTXA104J50
	C1932	CFTXA153J50
	C1913, C1914, C1961	CFTXA154J50
	C1939, C1963	CFTXA223J50
	C1949	CFTXA333J50
	C1921	CFTXA334J50
	C1919	CFTXA473J50
	C1946	CFTXA683J50
	C1967	CKSQYB103K50
	C1970	CKSQYB562K50
	C1944, C1966	CKSQYF104Z50
	C1947	CQMA392J50
	C1948	CQMA472J50
	C1954	CQMA562J50
	C1955	CQMA682J50

RESISTORS

Mark	No. Description	Part No.
	VR1901 (47kΩ)	ACP1045
	Other Resistors	RS1/10S□□□J

OTHERS

Mark	No. Description	Part No.
	X1901 CRYSTAL RESONATOR (8.00MHz)	ASS1015

7. ADJUSTMENTS

NOTES:

- *The model name is indicated with the family name as shown below.*
  The 75 family includes SD-P5075-K, SD-P5575-K and SD-P4575-K.
  The 73 family includes SD-P5073-K and SD-P4573-K.

- In this section, all items required to be adjusted on this unit are described in the order of the adjustments to be performed. (See section 7.2.)
  For the adjustment items of each assembly, refer to page 134.
- When replacing the assemblies, be sure to use an assembly which works completely.
- Characters in parentheses ( ) beside an adjustment point are an abbreviation of the assembly containing that adjustment point.
  C : CONVERGENCE assembly
  S : POWER SUPPLY assembly
  W : W RECEIVER assembly
  (75 and 73 families only)
  F :S FRONT CONTROL assembly (PRO-97 only)
  T : TUNER-VIDEO assembly
  A : AV I/O assembly
  VR1: Focus variable resistor (VR1)
  P : P IN P assembly
  D : DOL. PRO. MOD
- The adjustment points and test points are shown in Fig. 7-6 and 7-7 for each assembly.
- A test signal should be input to the laser disc terminal on the rear panel unless otherwise noted.
- Set the picture quality to standard unless otherwise noted.

Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S.numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877. " Dolby " and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

• FACTORY ADJ mode

1. Entering FACTORY ADJ mode

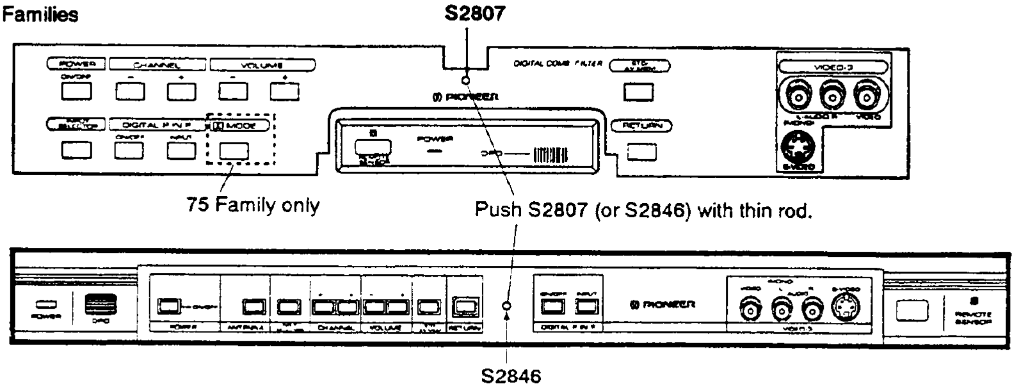
Open the door on the front panel, turn the power on, and push the switch S2807 (75 and 73 families only) or S2846 (PRO-97 only) in a small hole at the center of the front panel with a thin rod. The unit will then enter FACTORY ADJ mode.

To release FACTORY ADJ mode, push the switch S2807 (75 and 73 families only) or S2846 (PRO-97 only) again, and a normal picture will be obtained.

2. Operating FACTORY ADJ mode

When the unit enters FACTORY ADJ mode, ADJUSTMENT RANGE mode is first obtained. Every time the MUTE key on the remote control unit is pressed, the operation mode is switched from ADJUSTMENT RANGE mode to ADJUSTMENT OFFSET mode, ADJUSTMENT VNR mode, ADJUSTMENT CINEMA 1 mode, ADJUSTMENT CINEMA 2 mode and ADJUSTMENT S-BRITE mode, as shown in Fig. 7-4. These modes are switched cyclically.

- **For 75 and 73 Families**



- **For PRO-97**

Fig. 7-1 Entering FACTORY ADJ mode

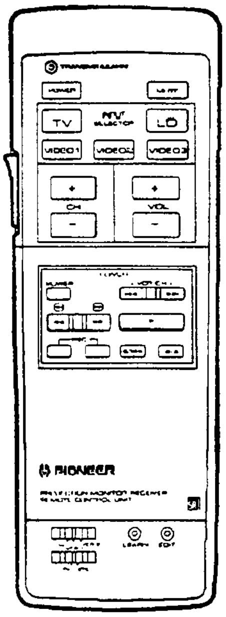


Fig. 7-2 Key indications on the remote control unit

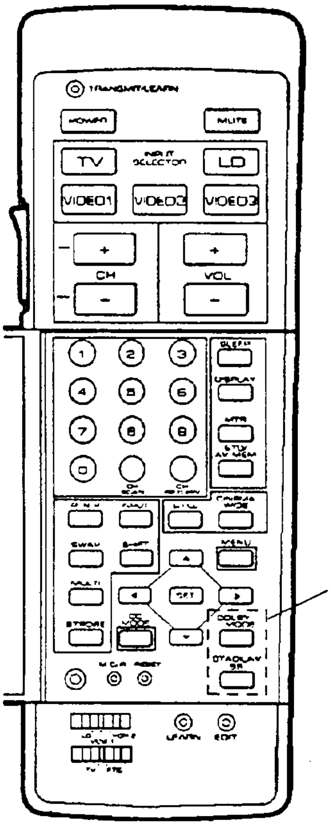


Fig. 7-3 Key indication on the remote control unit
(The upper cover is opened.)

① ADJUSTMENT RANGE mode

The ADJUSTMENT RANGE mode is to check how much the picture and sound quality change.

- **Function of the ADJUSTMENT RANGE mode**

In this mode, adjustment functions are assigned to the numeric keys 1 through 9 of the remote control unit, as shown in Fig. 7 - 4. Each numeric key corresponds to a particular adjustment function. Press the numeric key corresponding to the desired function and the selected function name will be displayed. To change the setting value, press the same key repeatedly and the setting value will change from CNT to MIN and MAX cyclically. When the balance adjustment is selected, the meaning of the setting values change as follows:

- BALNC (BALANCE)

CNT : Center (Both channel output)
↓
MIN : Right channel output
↓
MAX : Left channel output

② ADJUSTMENT OFFSET mode
(Pioneer's standard setting mode)

ADJUSTMENT OFFSET mode is to set the standard picture quality (Pioneer's standard) for a normal picture.

- **Function of the ADJUSTMENT OFFSET mode**

To adjust picture quality, press one of the numeric keys 1 through 6, and an item to be adjusted such as color, details, etc., assigned to the pressed button is selected and will appear on the screen, as shown in Fig. 7 - 4. To change the setting value, press the ◀, ▶ keys until the desired value appears on the screen.

The picture quality set in this mode is the standard picture quality which appears by pressing the STD/AV MEM key with a normal picture.

③ ADJUSTMENT VNR mode
(Video Noise-Reduction setting mode)

ADJUSTMENT VNR mode is to set the standard for VNR for a normal picture.

- **Function of the ADJUSTMENT VNR mode**

The method of adjustment is the same as that for ② ADJUSTMENT OFFSET mode, mentioned above, except for the setting values.

The picture quality (COLOR to DETAL) set in this mode becomes the picture quality when turning the VNR ON with a normal picture.

④ADJUSTMENT CINEMA 1 mode

ADJUSTMENT CINEMA 1 mode is to set the standard for CINEMA 1 for a normal picture.

- **Function of the ADJUSTMENT CINEMA 1 mode**

The method of adjustment is the same as that for ② ADJUSTMENT OFFSET mode, mentioned above, except for the setting values.
The picture quality in terms of COLOR, DETAL, etc., set in this mode is obtained as standard for a normal picture in CINEMA 1 mode.

⑤ADJUSTMENT CINEMA 2 mode

ADJUSTMENT CINEMA 2 mode is to set the standard for CINEMA 2 for a normal picture.

- **Function of the ADJUSTMENT CINEMA 2 mode**

The method for adjustment is the same as that for ② ADJUSTMENT OFFSET mode, mentioned above, except for the setting values.
The picture quality in terms of COLOR, DETAL, etc., set in this mode is obtained as standard for a normal picture in CINEMA 2 mode.

⑥ADJUSTMENT S-BRITE(soft brightness) mode

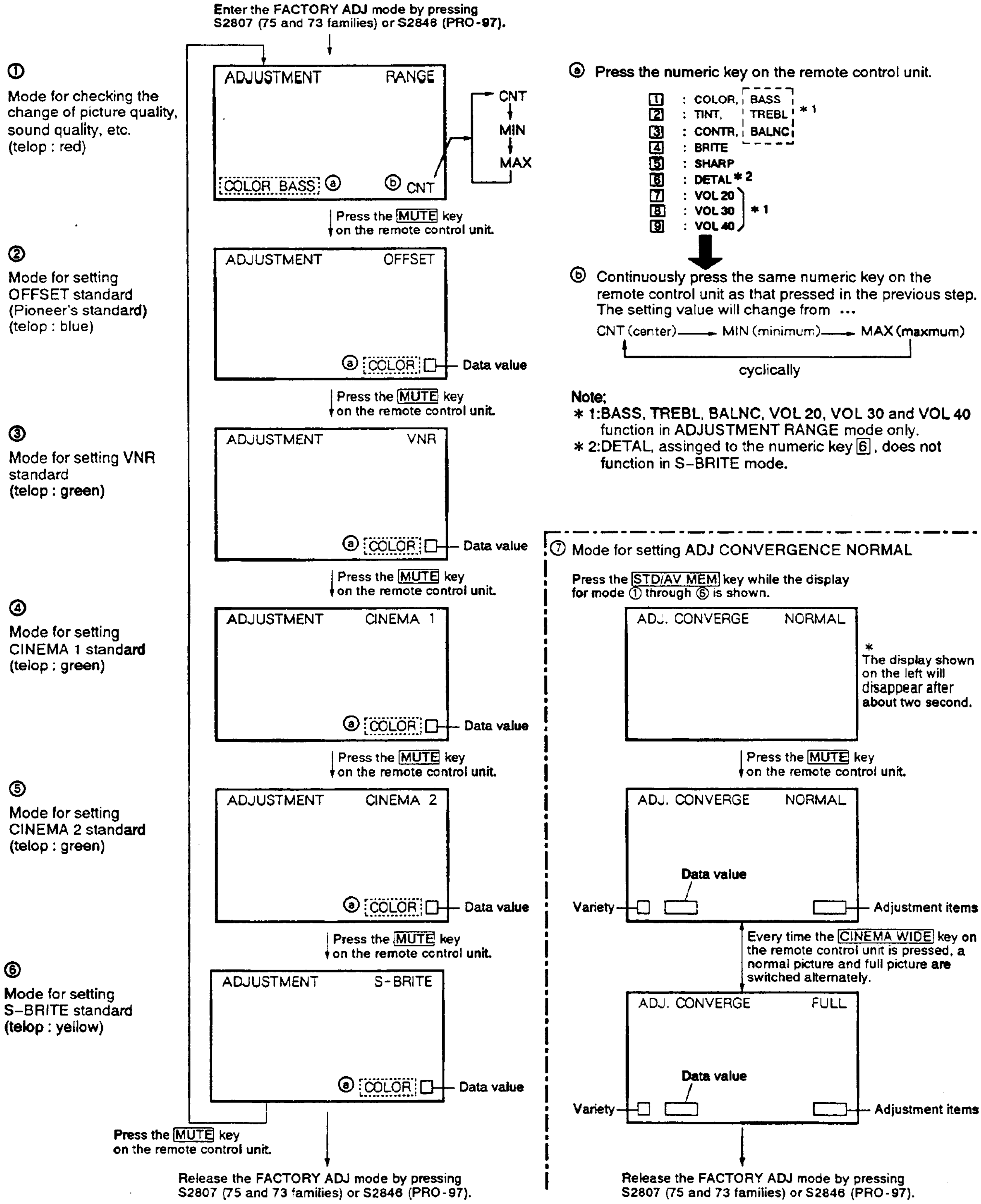
ADJUSTMENT S-BRITE mode is to set the standard for S-BRITE POSITION for a normal picture.

- **Function of the ADJUSTMENT S-BRITE mode**

The method of adjustment is the same as that for ② ADJUSTMENT OFFSET mode, mentioned above, except for the setting values. DETAL does not function in ADJUSTMENT S-BRITE mode.
The picture quality in terms of COLOR, BRITE, etc., set in this mode is obtained as standard for a normal picture in S-BRITE POSITION mode.

⑦ADJ. CONVERGENCE NORMAL mode

ADJ. CONVERGENCE NORMAL mode is for setting convergence. For details, see section "7.4. CONVERGENCE ADJUSTMENTS."



Enter the FACTORY ADJ mode by pressing S2807 (75 and 73 families) or S2846 (PRO-97).

① Mode for checking the change of picture quality, sound quality, etc. (telop : red)

② Mode for setting OFFSET standard (Pioneer's standard) (telop : blue)

③ Mode for setting VNR standard (telop : green)

④ Mode for setting CINEMA 1 standard (telop : green)

⑤ Mode for setting CINEMA 2 standard (telop : green)

⑥ Mode for setting S-BRITE standard (telop : yellow)

Press the MUTE key on the remote control unit.

Release the FACTORY ADJ mode by pressing S2807 (75 and 73 families) or S2846 (PRO-97).

ⓐ Press the numeric key on the remote control unit.

1 : COLOR, BASS
2 : TINT, TREBL *1
3 : CONTR, BALNC
4 : BRITE
5 : SHARP
6 : DETAL*2
7 : VOL 20
8 : VOL 30 *1
9 : VOL 40

ⓑ Continuously press the same numeric key on the remote control unit as that pressed in the previous step. The setting value will change from ...

CNT (center) → MIN (minimum) → MAX (maxmum)
cyclically

Note;
* 1:BASS, TREBL, BALNC, VOL 20, VOL 30 and VOL 40 function in ADJUSTMENT RANGE mode only.
* 2:DETAL, assinged to the numeric key 6, does not function in S-BRITE mode.

⑦ Mode for setting ADJ CONVERGENCE NORMAL

Press the STD/AV MEM key while the display for mode ① through ⑥ is shown.

* The display shown on the left will disappear after about two second.

Every time the CINEMA WIDE key on the remote control unit is pressed, a normal picture and full picture are switched alternately.

Release the FACTORY ADJ mode by pressing S2807 (75 and 73 families) or S2846 (PRO-97).

ADJUSTMENT RANGE
COLOR BASS ⓐ
ⓑ CNT
CNT
MIN
MAX
ADJUSTMENT OFFSET
ADJUSTMENT VNR
ADJUSTMENT CINEMA 1
ADJUSTMENT CINEMA 2
ADJUSTMENT S-BRITE
ⓐ COLOR
Data value
ADJ. CONVERGE NORMAL
ADJ. CONVERGE FULL
Variety
Adjustment items

Fig. 7-4 Operating FACTORY ADJ mode

7.1 ADJUSTMENTS REQUIRED WHEN AN ASSEMBLY IS REPAIRED OR REPLACED

Note: For the method of adjustment, see section "7.2 Adjustment method." A number in parentheses indicates the step number in section "7.2 Adjustment method."

7.1.1 When POWER SUPPLY Assembly was Repaired

1. (step 1) 135V power supply adjustment
2. (step 7) Focus VR adjustment
3. (step 9) Horizontal size adjustment
4. (step 12) White balance adjustment
5. (step 10) Convergence adjustment

7.1.2 When POWER SUPPLY Assembly was Replaced

- Adjustments of (step 9), (step 12) and (step 10)

7.1.3 WhenTUNER-VIDEO Assembly was Repaired

(1) When the video block was repaired
  1. (step 3) Brightness adjustment
  2. (step 12) White balance adjustment
  3. (step 14) Blue tailing adjustment
  4. (steps 16 through 20) Pioneer's standard settings

(2) When the microcomputer block was repaired
  1. (step 2) Contrast coarse adjustment
  2. (step 3) Brightness adjustment
  3. (step 13) Test-cross H-center position adjustment
  4. (steps 16 through 20) Pioneer's standard setting
  5. (step 23) DPO BASE setting
  6. (step 21) VNR, S-BRITE, CINEMA 1 and CINEMA 2 settings

  Reset the other items such as the tuner preset channels, convergence, etc. which should be set by the user.

(3) When the tuner block was repaired
  1. (step 15) Tuner block adjustment

(4) When the audio block was repaired
  No adjustment is required.

7.1.4 When TUNER-VIDEO Assembly was Replaced

All the above adjustments except for the test-cross H-center position adjustment and tuner adjustment are required.

7.1.5 When CONVERGENCE Assembly was Repaired or Replaced

1. (step 9) Horizontal size adjustment
2. (step 8) Vertical size adjustment
3. (step 10) Convergence adjustment

7.1. 6 When R., G. or B. CRT DRIVE Assembly was Repaired or Replaced

- Check the white balance. If the white balance is not correct, perform white balance adjustment (step 12).

7.1.7 When W RECEIVER Assembly was Repaired (75 and 73 families only)

- (step 24) DPO sensitivity adjustment

7.1.8 When W RECEIVER Assembly was Replaced (75 and 73 families only)

- No adjustment is required.

7.1.9 When S FRONT CONTROL Assembly was Repaired (PRO-97 only)

- (step 24) DPO sensitivity adjustment

7.1.10 When S FRONT CONTROL Assembly was Replaced (PRO-97 only)

- No adjustment is required.

7.1.11 When CRT Assembly R, G or B was Replaced

Notes:

- For details on replacing a CRT assembly, see section "8. Replacing the CRT Assembly."
- When one or two tubes were replaced, perform the adjustment referring to the tube not replaced. If a CRT assembly for a color other than green was replaced, be sure to adjust the following items referring to the green.
  1. (step 4) Deflection yoke lean adjustment
  2. (step 5) Screen center adjustment
  3. (step 7) Focus VR adjustment
  4. (step 10) Convergence adjustment
  5. (step 12) White balance adjustment
  6. (steps 16 through 20) Pioneer's standard settings

7.1.12 When Lens Assembly was Replaced

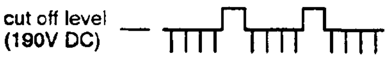
1. (step 6) Focus adjustment of Lens assembly
2. (step 10) Convergence adjustment

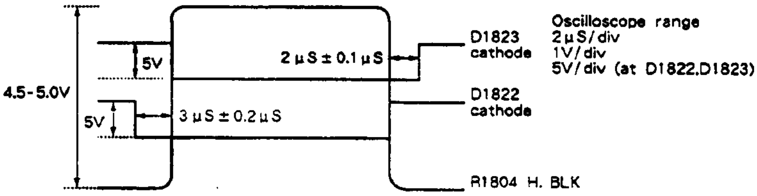
7.1.13 When Other Assembly was Repaired or Replaced

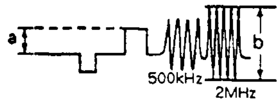
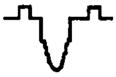
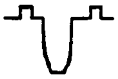
- No adjustment is required.

7.2 ADJUSTMENT METHOD

- Adjustment points and test points are shown in Fig. 7–6 and 7–7.
- Perform the adjustment for standard picture quality unless otherwise noted.
- For information on FACTORY ADJ mode, see pages 130 through 133.

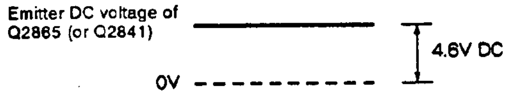
Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	135V power supply adjustment	Color bar	VR101(S)	Adjust the voltage at both sides of C135 on the POWER SUPPLY assembly to 135 V ± 1 V.
2	Contrast coarse adjustment		CONTR (remote control unit)	Note: Perform this adjustment only when a data memory IC (IC901: X24C04P) on a TUNER-VIDEO assembly was replaced or when the contrast of ADJUSTMENT OFFSET in FACTORY ADJ mode is extremely shifted. ● Activate ADJUSTMENT OFFSET mode of FACTORY ADJ mode. (telop: blue) ● Press the 3 key on the remote control unit to select CONTR. ● Press the ◀ or ▶ keys so that the telop shows about +40.
3	Pioneer's standard settings Brightness adjustment	Cross hatch	BRITE (remote control unit)	● Press the 4 key on the remote control unit to select BRITE in ADJUSTMENT OFFSET mode of FACTORY ADJ mode. ● Adjust the cut off level at TP-GK on the G. CRT DRIVE assembly to 190 V DC. 
4	Deflection yoke lean adjustment	Cross signal (or generate a test cross signal for convergence adjustment by applying a free signal.)	Deflection yoke mounting position of replaced CRT assembly (left and right lean)	Note 1:This adjustment should be done in NORMAL mode. Note 2:This adjustment is required when a CRT assembly and deflection yoke were replaced. ● Loosen the fixing screw of the deflection yoke for the color to be replaced and turn the adjustment point right and left so that the lean parts of the vertical and horizontal lines at the center of the screen align with the lines of a color not replaced. ● After adjustment, tighten the fixing screw for the deflection yoke.
5	Screen center adjustment	Cross signal (or generate a test cross signal for convergence adjustment by applying a free signal.)	Centering magnet of the deflection yoke of replaced CRT assembly (see Fig. 7-7)	Note 1: This adjustment should be done in NORMAL mode. Note 2: This adjustment is to adjust the center point of the screen when a CRT assembly and deflection yoke were replaced. For red or blue adjustment, turn FACTORY ADJ mode ON and then OFF to place the convergence POSITION at the center of the adjustable range. ● Move the centering magnet of the deflection yoke for the replaced color so that the horizontal and vertical lines at the center of the screen align with the lines for a color not replaced.
6	Focus adjustment of Lens assembly	Cross hatch	Lens assembly mounted to replaced CRT assembly	To adjust the lens assembly, remove the screen frame block, and attach a piece of translucent paper such as tracing paper with tape as shown in Fig. 7-7. Place a spacer 41 mm (75 and 73 Families) or 7 mm (PRO-97) thick between the translucent paper and the cabinet to match the distance from the CRT assembly to the screen surface. (Prepare a spacer of the specified thickness in advance.) ● Move the lens assembly left and right as shown in Fig. 7-7 until the best focusing is obtained.

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
7	Focus VR adjustment	Cross hatch	Focus VR (VR1)	● Turn the focus VR for best focusing. ● Repeat adjustments for the lens assembly and focus VR. Note: For adjusting the focus for blue, the following adjustment is required after the focus adjustment mentioned above. Turn the focus VR for blue clockwise so that a blue line is slightly thickened compared with the line with the focus adjusted.
8	Vertical size adjustment	Monoscope or general broadcasting	NORMAL: VR2601 (C), WIDE: VR2602 (C)	When a monoscope signal is used, adjust the size so that the following value is obtained. Normal mode : 90% ± 3%, Wide mode : 76% ± 3% When general broadcasting is used, adjust the size so that the picture is completely displayed on the screen. Note : Perform the adjustment for a NORMAL screen, and then for a WIDE screen.
9	Horizontal size adjustment	Monoscope or general broadcasting	NORMAL: VR2307 (C), WIDE: VR2308 (C)	When a monoscope signal is used, adjust the size so that the following value is obtained. Normal mode : 96% ± 2%, Wide mode : 88% ± 2% When general broadcasting is used, adjust the size so that the picture is completely displayed on the screen.
10	Convergence adjustment	Cross hatch	Adjustment using the remote control unit	● Adjust the VRs on the CONVERGENCE assembly so that the green cross hatch display normally appears on the screen with only the green CRT drive activated. ● Adjust the red line so that it aligns with the green line on the cross hatch screen with the green and red CRT drives activated. ● Adjust the blue line so that it aligns with a green line on the cross hatch screen with the green and blue CRT activated. Note: For details on the convergence adjustment, see section "7.4 CONVERGENCE ADJUSTMENT."
11	Trimming adjustment • SUB μCOM adjustment 1st • SUB μCOM adjustment 2nd	Monoscope	VR1801(A) VR1812(A)	● When a monoscope signal is used Check that the screen size is normal, set the screen to MENU → PRESET → TRIMMING → TRIMMING ON. Turn VR1801 until the right half of the picture which can be trimmed covers 92% ± 1% of the screen size. Then turn VR1812 until the left half of the picture which can be trimmed covers 92% ± 1% of the screen size. ● When a monoscope signal is not obtained Perform the adjustment so that the waveform at R1804 (H. BLK) on the AV I/O assembly and at the cathodes of D1822 and D1823 becomes as shown below. (D1822 : VR1801, D1823 : VR1812)  4.5-5.0V 5V 2 μS ± 0.1 μS 5V 3 μS ± 0.2 μS D1823 cathode D1822 cathode R1804 H. BLK Oscilloscope range 2 μS/div 1V/div 5V/div (at D1822,D1823)
12	White balance adjustment	Color bar signal without color signal	Screen VR (VR1), VR602 (T) (red drive VR)	● Adjust the screen VR (red or blue) so that the dark part of the screen becomes gray. Do not move the screen VR (green). ● Adjust the drive VR (red) so that the bright part of the screen becomes white.
13	Test cross H-center position adjustment	Free video signal	TC901(T)	Note: Press S2807 (75 and 73 families) or S2846 (PRO-97), The FACTORY ADJ mode ON/OFF switch, twice to place the test cross signal in its initial position. (The unit enters FACTORY ADJ mode, and returns to normal mode.) ● Set the test cross screen for adjusting the convergence position.(For user) ● Adjust the position so that the test cross is placed at the center of the screen.

Step No.	Adjustment Item		Input Signal	Adjustment Point	Adjustment Procedure
14	**Blue tailing adjustment**		Cross signal	VR603(T)	● Adjust the SG output of the input cross signal to maximum level. ● Set the contrast to maximum using the remote control unit. ● Turn VR603 fully counterclockwise. (Blue tailing appears) ● Adjust the vertical line of the cross on the screen so that blue tailing disappears.
15	Tuner block adjustment		The audio section in the tuner block is adjusted. For the items to be adjusted, see section "7.5 TUNER SECTION."		
● Set to the ADJUSTMENT OFFSET mode of FACTORY ADJ mode (telop: blue).					
16	Pioneer's standard settings	Sharpness adjustment	**Multiburst**	**SHARP (Remote control unit)**	● Set DETAL to 0 using the remote control unit. ● Adjust the ratio of a (the level from black to white) to b (peak-to-peak value of 2 MHz) at TP–05 on the TUNER-VIDEO assembly to a : b = 8 : 5. a : b = 8 : 5 
17		Detail adjustment		DETAL (Remote control unit)	Adjust so that telop shows − 22.
18		Color adjustment	Color bar	COLOR (Remote control unit)	Adjust screen to optimum condition.
19		Tint adjustment		TINT (Remote control unit)	Adjust screen to optimum condition.
20		Contrast adjustment		CONTR (Remote control unit)	Adjust screen to optimum condition.
			Normal video signal	—	At the TP-BK of B. CRT assembly, check that the signal is shaped as shown below.  Shapely waveform  shapeless waveform
			● Set to the VNR setting mode of FACTORY ADJ mode (telop: green).		
21	VNR, S-BRITE, CINEMA 1, CINEMA 2 settings		Normal color video signal (For setting the numeric value only, no signal is required.)	Set the telop value for each setting item, as shown below, using a remote control unit.	

Adjustment items	Telop			
	VNR	S-BRITE	CINEMA 1	CINEMA 2
COLOR	− 5	15	7	13
TINT	0	− 36	1	2
CONTR	0	− 90	30	0
BRITE	− 2	8	− 7	4
SHARP	− 10	0	7	0
DETAL	− 25	−	0	− 3

22	TINT adjustment of Sub–picture		Color bar (Main and Sub–picture)	VR3001(P)	TINT of the Sub–picture ought not to shift. If it is shifted, adjust as follows. Set to P in P picture on the screen, and adjust the TINT of the Sub–picture so that it becomes the same as that of the Main–picture.

<table>
<tr><th>Step No.</th><th>Adjustment Item</th><th>Input Signal</th><th>Adjustment Point</th><th>Adjustment Procedure</th></tr>
<tr><td>23</td><td>DPO BASE setting</td><td>Normal color video signal (For setting the numeric value only, no signal is required.)</td><td>COLOR, CONTR, BRITE (Remote control unit)</td><td>
● Select PRESET by pressing the MENU key on the remote control unit, then press the SET key. Then select DPO BASE and press the SET key, and the display for setting appears.
● Set DPO LIGHT under conditions of sufficient brightness.
● Set DPO DARK under conditions of sufficient darkness.
<table>
<tr><th>Picture quality</th><th>DPO LIGHT</th><th>DPO DARK</th></tr>
<tr><td>COLOR</td><td>0</td><td>– 3</td></tr>
<tr><td>CONTR</td><td>0</td><td>– 10</td></tr>
<tr><td>BRITE</td><td>0</td><td>– 2</td></tr>
</table>
Note: For details on the setting procedure, refer to the operating instructions.</td></tr>
<tr><td>24</td><td>DPO sensitivity adjustment</td><td>—</td><td>VR2865(W) (75 and 73 families)
VR2841(F) (PRO-97)</td><td>
Note: This adjustment is to set the sensitivity of the DPO sensor. Adjust the value as per the customer's request. The adjusting procedure at the factory is shown below for your reference.
● Illuminate the DPO sensor from the rectangular position to the sensor surface using an incandescent lamp with luminance of 50 lux at the sensor surface.
● Adjust the emitter voltage of Q2865 on the W RECEIVER assembly (75 and 73 families) [or Q2841 on the S FRONT CONTROL assembly (PRO-97)] to 4.6 V(± 0.3 V).

</td></tr>
</table>

7.3 ANODE VOLTAGE MEASURING METHOD

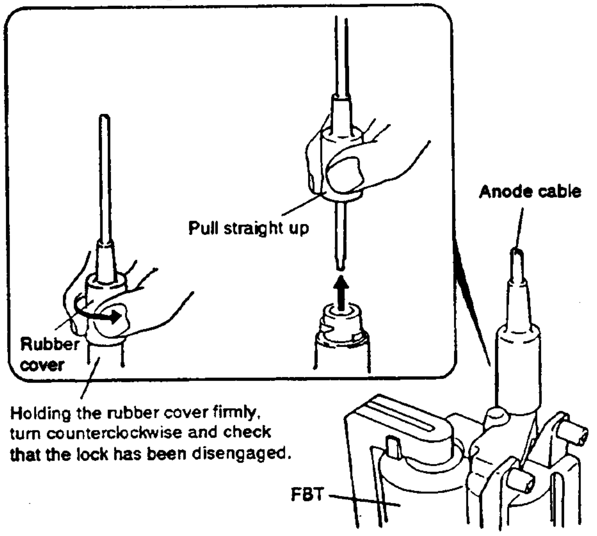
Disconnect the FBT anode cable as outlined in Fig. 7–5. Measure at the point where the cable enters the FBT.

Caution: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, POWER SUPPLY assembly).

SERVICEMAN WARNING

Before removing the anode cable, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

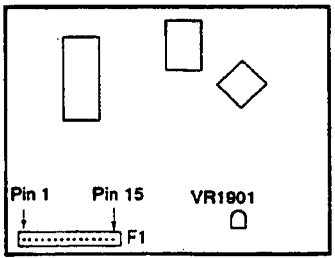
Note: Determine the extent of the rubber cover before disconnecting the cable.



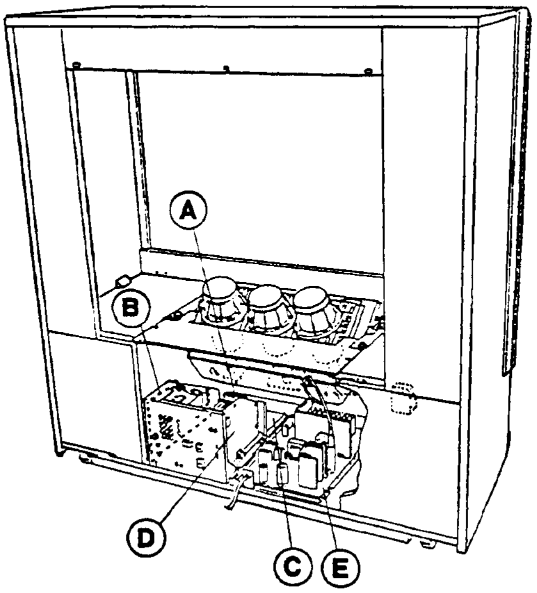
Holding the rubber cover firmly, turn counterclockwise and check that the lock has been disengaged.

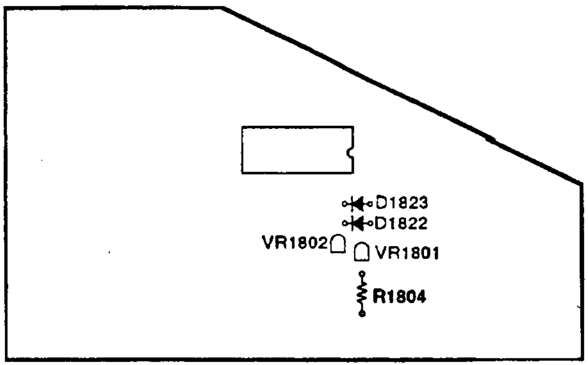
Note: When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

Fig. 7–5 Disconnecting the anode cable

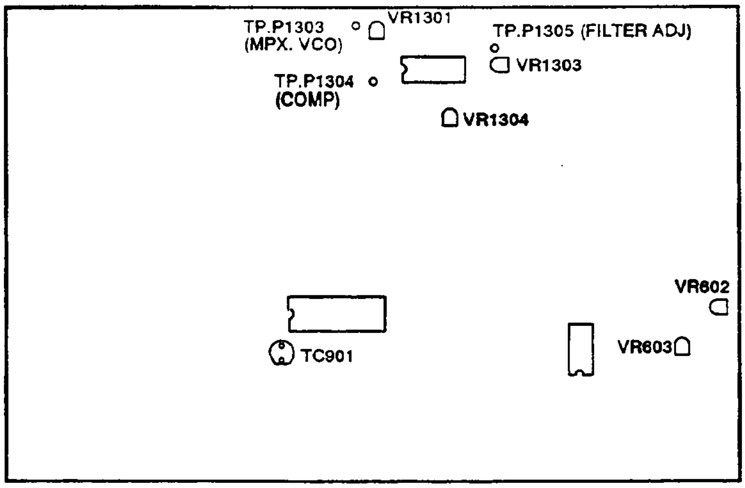

Pin 1
Pin 15
VR1901
F1

Ⓐ DOL. PRO. MOD.

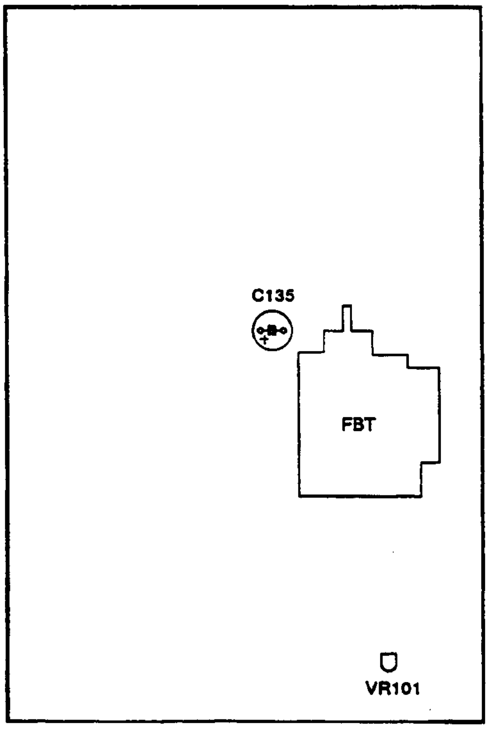



D1823
D1822
VR1802
VR1801
R1804

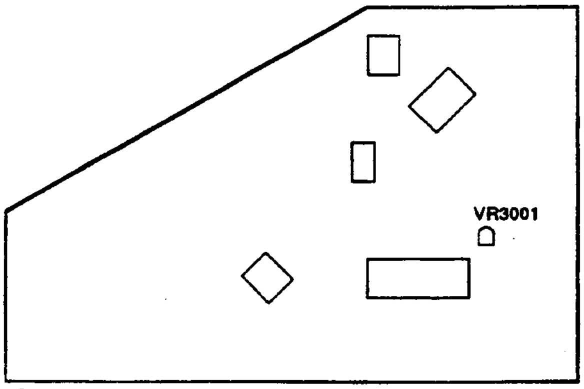
Ⓑ AV I/O ASSEMBLY


TP.P1303
(MPX. VCO)
VR1301
TP.P1305 (FILTER ADJ)
VR1303
TP.P1304
(COMP)
VR1304
VR602
VR603
TC901

Ⓒ TUNER-VIDEO ASSEMBLY

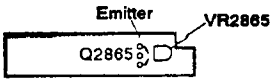

C135
FBT
VR101

Ⓔ POWER SUPPLY ASSEMBLY

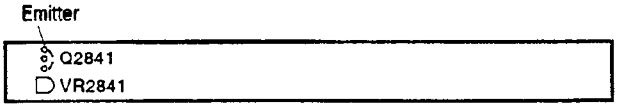


Ⓓ P IN P ASSEMBLY

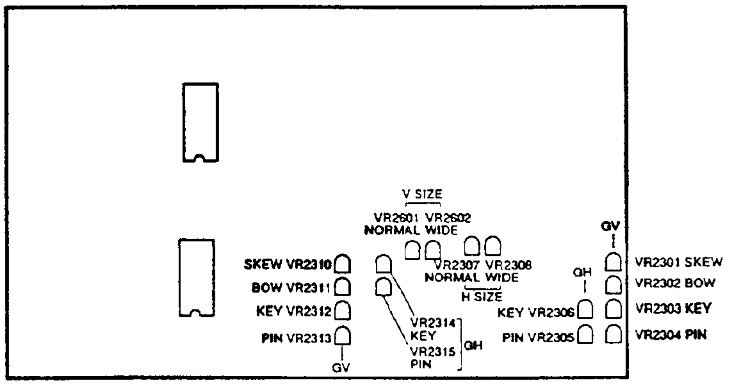
Fig. 7-6 Adjustment point (1)(Rear side)


Emitter
VR2865
Q2865

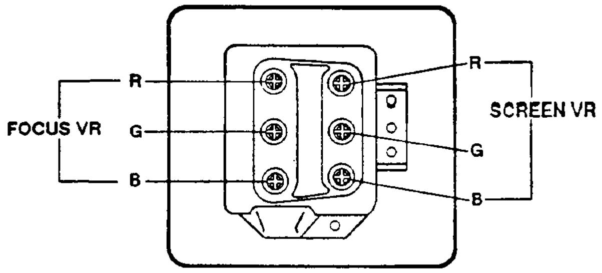
Ⓐ W RECEIVER ASSEMBLY (75 and 73 Families)


Emitter
Q2841
VR2841

Ⓑ S FRONT CONTROL ASSEMBLY (PRO–97)

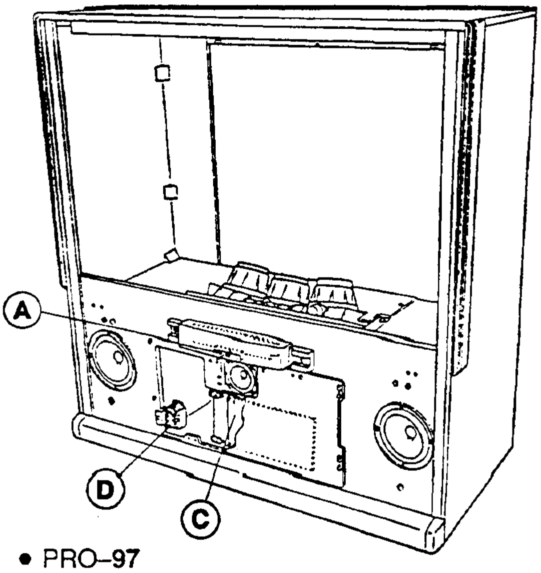

V SIZE
VR2601 VR2602
NORMAL WIDE
GV
SKEW VR2310
BOW VR2311
KEY VR2312
PIN VR2313
GV
VR2307 VR2308
NORMAL WIDE
H SIZE
GH
VR2314
KEY
VR2315
PIN
GH
KEY VR2306
PIN VR2305
VR2301 SKEW
VR2302 BOW
VR2303 KEY
VR2304 PIN

Ⓒ CONVERGENCE ASSEMBLY

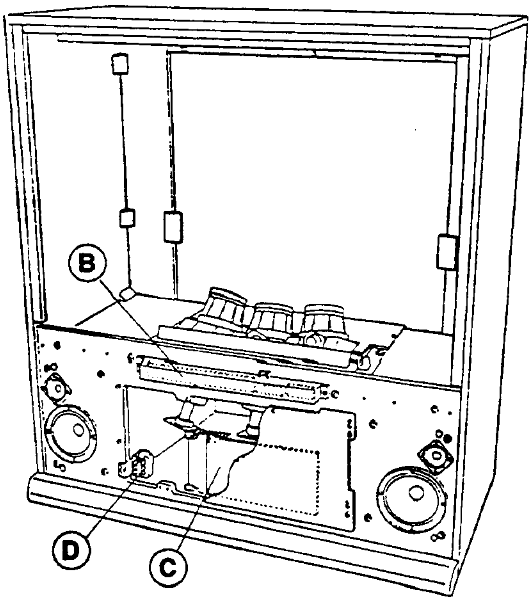

FOCUS VR
R
G
B
SCREEN VR
R
G
B

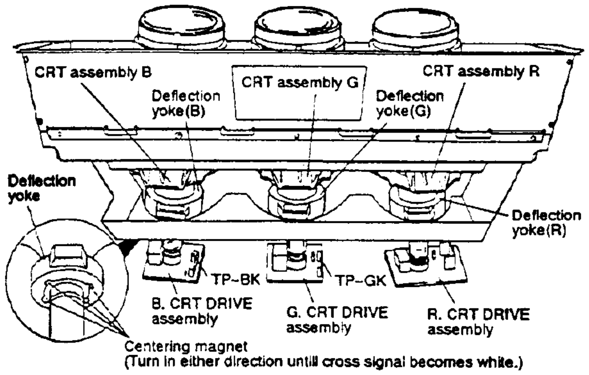
Ⓓ FOCUS VR (VR1)

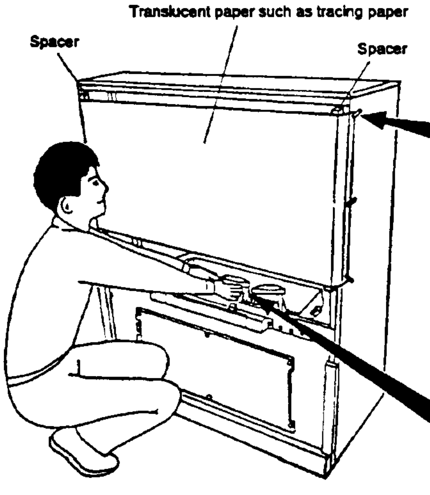
- 75 and 73 Families



- PRO–97




CRT assembly B
CRT assembly G
CRT assembly R
Deflection yoke(B)
Deflection yoke(G)
Deflection yoke
Deflection yoke(R)
TP-BK
TP-GK
B. CRT DRIVE assembly
G. CRT DRIVE assembly
R. CRT DRIVE assembly
Centering magnet
(Turn in either direction untill cross signal becomes white.)


Translucent paper such as tracing paper
Spacer
Spacer

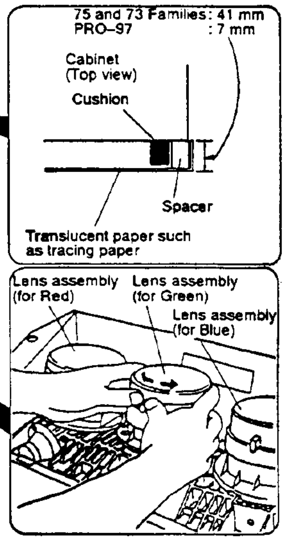

75 and 73 Families: 41 mm
PRO–97 : 7 mm
Cabinet
(Top view)
Cushion
Spacer
Translucent paper such as tracing paper
Lens assembly (for Red)
Lens assembly (for Green)
Lens assembly (for Blue)

Fig. 7–7 Adjustment point (2)(Front side)

7.4 CONVERGENCE ADJUSTMENT

7.4.1 Adjustment Method for Convergence

Perform the adjustment in ADJ. CONVERGE NORMAL or FULL mode of FACTORY ADJ mode. (For how to enter the FACTORY ADJ mode, see section "FACTORY ADJ mode" on page 130.)

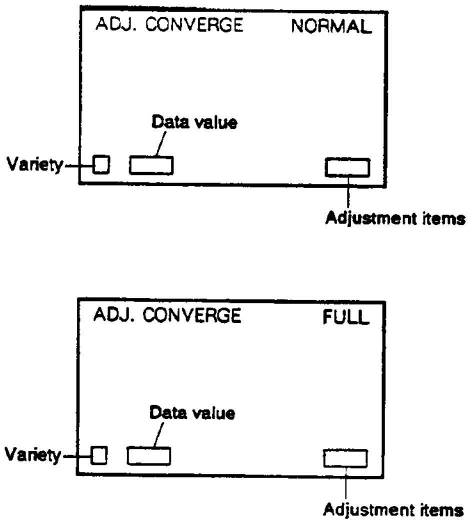
- **Green line convergence adjustment**
  Adjust the green line convergence with VRs on the CONVERGENCE assembly.
- **Red or blue line convergence adjustment**
  Perform the following adjustment using the remote control unit.
  - Adjustment in ADJ. CONVERGE NORMAL mode
    NORMAL mode is to adjust the convergence for a normal screen.
    - Operating procedure
      Alphabetics shown in the lower-left portion of the screen indicate the type of convergence. Change the type by pressing the CH RETURN key on the remote control unit. Every time the CH RETURN key is pressed, the type changes in the order

      → RH → RV → BH → BV → cyclically.

      The characters to the right of the type indicate the setting value, and can be changed with the ◀ or ▶ keys on the remote control unit.
      It the lower-right portion of the screen, the adjustment items are displayed. The items are assigned to the numeric keys from 0 : STATIC to 9 : SUB LIN, on the remote control unit.
  - Adjustment in ADJ. CONVERGE FULL mode
    FULL mode is to adjust the convergence for a wide screen.
    The operating procedure is the same as that in NORMAL mode.

- To output red, green and blue separately
  - To output red : Press the P IN P key on the remote control unit, then TV key.
  - To output green : Press the P IN P key on the remote control unit, then LD key.
  - To output blue : Press the P IN P key on the remote control unit, then VIDEO 1 key.

To change the displayed color, be sure to press P IN P key. If the next key is pressed without pressing the P IN P key, colors are overlaid.



• Variety

→ RH (Red • Horizontal)
↓
RV (Red • Vertical)
↓
BH (Blue • Horizontal)
↓
BV (Blue • Vertical)

• Data value
Adjust the value by pressing the ◀ or ▶ keys on the remote control unit.

•Adjustment items
(assigned to the numeric keys)

0 : STATIC
1 : SKEW
2 : BOW → 4TH BOW
3 : SUB KEY
4 : KEY → MID KEY
5 : SUB PIN → M S PIN → 4 S PIN → S C PIN
6 : PIN → MID PIN → 4TH PIN
7 : LIN → 4TH LIN
8 : SIZE
9 : SUB LIN

Fig. 7 – 8 Adjustment method for convergence

Numeric keys	Adjustment items	Type					
		GH	GV	RH	RV	BH	BV
0	STATIC	/	/	○	○	○	○
1	SKEW	/	VR	○	○	○	○
2	BOW	/	VR	○	○	○	○
	4TH BOW	/	/	○	/	○	/
3	SUB KEY	/	/	○	○	○	○
4	KEY	VR	VR	○	○	○	○
	MID KEY	/	/	/	○	/	○
5	SUB PIN	/	/	○	○	○	○
	M S PIN	/	/	○	/	○	/
	4 S PIN	/	/	○	/	○	/
	S C PIN	/	/	/	○	/	○
6	PIN	VR	VR	○	○	○	○
	MID PIN	/	/	○	○	○	○
	4TH PIN	/	/	○	○	○	○
7	LIN	/	/	○	○	○	○
	4TH LIN	/	/	○	/	○	/
8	SIZE	/	/	○	○	○	○
9	SUB LIN	/	/	○	○	○	○

○ = yes, /=No, VR=Adjust GH, GV with a semifixed VR.

7.4.2 Green Line Adjustment

- A green line is a reference line for the red and blue lines. Be sure to adjust precisely.
- Perform the green line adjustment with a single green color.
- For information on blocks which are referred to in some operation columns, see Fig. 7- 9 and 7–13.
- Adjust in ADJ. CONVERGE NORMAL mode, then in ADJ. CONVERGE FULL mode.

Step No.	Adjustment Item		Adjustment Point	Adjustment Procedure
1	Center line adjustment	GV-SKEW	VR2301(N) VR2310(F)	Adjust so that the center horizontal line of the screen is not leaned.
2		GV-BOW	VR2302(N) VR2311(F)	Adjust so that the center horizontal line of the screen is straight.
3	Repeat steps 1 and 2 to obtain the optimum center horizontal lines.			
4	Distortion adjustment	GV-PIN	VR2304(N) VR2313(F)	Adjust so that the horizontal lines in the E block of the screen are straight.
5		GH-PIN	VR2305(N) VR2315(F)	Adjust so that the vertical lines in the B and C blocks on the screen are straight.
6	Lean adjustment	GV-KEY	VR2303(N) VR2312(F)	Adjust so that the horizontal lines in the E block of the screen are not leaned.
7		GH-KEY	VR2306(N) VR2314(F)	Adjust so that the vertical lines in the B and C blocks on the screen are not leaned.
8	Repeat steps 4 through 7 and then 1 through 7 to obtain the optimum lines.			

Note ; (N): at ADJ. CONVERGE NORMAL
(F): at ADJ. CONVERGE FULL

7.4.3 Red Line Adjustment

- Adjust the red line convergence using a green line and red line.
- Adjust it by overlaying a red line on a green line using the ◀ or ▶ keys on the remote control unit so that the line becomes yellow.
- After making the adjustments for all items, perform fine adjustment referring to the whole screen.
- For information on blocks which are referred to in some operation columns, see Fig. 7-9 and 7-13.
- Adjust in ADJ. CONVERGE NORMAL mode, then in ADJ. CONVERGE FULL mode.

• Red Adjustment in the Horizontal Direction

Step No.	Adjustment Item		Adjustment Procedure
1	Center line adjustment	RH-SKEW	Adjust so that the center vertical line of the screen is not leaned.
2		RH-BOW	Adjust so that the center vertical line of the screen is not distorted and is straight.
3		RH-4TH BOW	
4		RH-STATIC	Converge the center vertical line in the green vertical line.
5	Repeat steps 1 through 4 to obtain the optimum center vertical line.		
6	Lean adjustment	RH-SUB KEY	Adjust so that the vertical lines in the B and C blocks of the screen are not leaned.
7		RH-KEY	
8	Repeat steps 6 and 7 to obtain vertical lines that are most perfectly vertical in the B and C blocks of the screen.		
9	Distortion adjustment	RH-M S PIN	Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
10		RH-SUB PIN	
11		RH-4 S PIN	
12		RH-MID PIN	
13		RH-PIN	
14		RH-4TH PIN	
15	Repeat steps 9 through 14 to obtain straight vertical lines in the right and left sections of the screen.		
16	Repeat steps 6 through 15 to obtain the optimum vertical lines in the right and left sections of the screen.		
17	Line intervals adjustment	RH-4TH LIN	Adjust the intervals of the vertical lines in the right and left sections of the screen and converge them in the green vertical lines.
18		RH-LIN	
19		RH-SIZE	
20		RH-SUB LIN	
21	Repeat steps 17 through 20 to obtain the optimum vertical lines in the right and left sections of the screen.		
22	Fine-adjust over the entire picture to obtain the optimum picture.		

• Red Adjustment in the Vertical Direction

Step No.	Adjustment Item		Adjustment Procedure
1	Center line adjustment	RV-SKEW	Adjust so that the center horizontal line of the screen is not leaned.
2		RV-BOW	Adjust so that the center horizontal line of the screen is not distorted and is straight.
3		RV-STATIC	Converge the center horizontal line in the green horizontal line.
4	Repeat steps 1 through 3 to obtain the optimum center horizontal line.		
5	Lean adjustment	RV-MID KEY	Adjust so that the horizontal lines in the D and E blocks of the screen are not leaned.
6		RV-SUB KEY	
7		RV-KEY	
8	Repeat steps 5 and 7 to obtain the horizontal lines that are most perfectly horizontal in the D and E blocks of the screen.		
9	Distortion adjustment	RV-SUB PIN	Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
10		RV-MID PIN	
11		RV-PIN	
12		RV-S C PIN	
13		RV-4TH PIN	
14	Repeat steps 9 through 13 to obtain straight horizontal lines in the upper and lower sections of the screen.		
15	Repeat steps 5 through 14 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
16	Line intervals adjustment	RV-LIN	Adjust the intervals of the horizontal lines in the D and E blocks of the screen and converge them in the green horizontal lines.
17		RV-SIZE	
18		RV-SUB LIN	
19	Repeat steps 16 through 18 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
20	Fine-adjust over the entire picture to obtain the optimum picture.		

7.4.4 Blue Line Adjustment

- Adjust the blue line convergence using a green line and blue line.
- Adjust it by overlaying a blue line on a green line using the ◀ or ▶ keys on the remote control unit so that the line becomes cyan.
- After making the adjustments for all items, perform fine adjustment referring to the whole screen.
- For information on blocks which are referred to in some operation columns, see Fig.7–9 and Fig.7–13.
- Adjust in ADJ. CONVERGE NORMAL mode, then in ADJ. CONVERGE FULL mode.

• Blue Adjustment in the Horizontal Direction

Step No.	Adjustment Item		Adjustment Procedure
1	Center line adjustment	BH-SKEW	Adjust so that the center vertical line of the screen is not leaned.
2		BH-BOW	Adjust so that the center vertical line of the screen is not distorted and is straight.
3		BH-4TH BOW	
4		BH-STATIC	Converge the center vertical line in the green vertical line.
5	Repeat steps 1 through 4 to obtain the optimum center vertical line.		
6	Lean adjustment	BH-SUB KEY	Adjust so that the vertical lines in the B and C blocks of the screen are not leaned.
7		BH-KEY	
8	Repeat steps 6 and 7 to obtain vertical lines that are most perfectly vertical in the B and C blocks of the screen.		
9	Distortion adjustment	BH-M S PIN	Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
10		BH-SUB PIN	
11		BH-4 S PIN	
12		BH-MID PIN	
13		BH-PIN	
14		BH-4TH PIN	
15	Repeat steps 9 through 14 to obtain straight vertical lines in the right and left sections of the screen.		
16	Repeat steps 6 through 15 to obtain the optimum vertical lines in the right and left sections of the screen.		
17	Line intervals adjustment	BH-4TH LIN	Adjust the intervals of the vertical lines in the right and left sections of the screen and converge them in the green vertical lines.
18		BH-LIN	
19		BH-SIZE	
20		BH-SUB LIN	
21	Repeat steps 17 through 20 to obtain the optimum vertical lines in the right and left sections of the screen.		
22	Fine-adjust over the entire picture to obtain the optimum picture.		

• Blue Adjustment in the Vertical Direction

Step No.	Adjustment Item		Adjustment Procedure
1	Center line adjustment	BV-SKEW	Adjust so that the center horizontal line of the screen is not leaned.
2		BV-BOW	Adjust so that the center horizontal line of the screen is not distorted and is straight.
3		BV-STATIC	Converge the center horizontal line in the green horizontal line.
4	Repeat steps 1 through 3 to obtain the optimum center horizontal line.		
5	Lean adjustment	BV-MID KEY	Adjust so that the horizontal lines in the D and E blocks of the screen are not leaned.
6		BV-SUB KEY	
7		BV-KEY	
8	Repeat steps 5 and 7 to obtain the horizontal lines that are most perfectly horizontal in the D and E blocks of the screen.		
9	Distortion adjustment	BV-SUB PIN	Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
10		BV-MID PIN	
11		BV-PIN	
12		BV-S C PIN	
13		BV-4TH PIN	
14	Repeat steps 9 through 13 to obtain straight horizontal lines in the upper and lower sections of the screen.		
15	Repeat steps 5 through 14 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
16	Line intervals adjustment	BV-LIN	Adjust the intervals of the horizontal lines in the D and E blocks of the screen and converge them in the green horizontal lines.
17		BV-SIZE	
18		BV-SUB LIN	
19	Repeat steps 16 through 18 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
20	Fine-adjust over the entire picture to obtain the optimum picture.		

7.4.5 Picture Movements in Horizontal Adjustments

The adjustments in the horizontal direction are performed by applying the convergence correction signals to the horizontal deflection and changing the amount of the correction. With these adjustments, the vertical lines will move.

This section describes the picture movements and the adjusting points when adjusting each item using a cross hatch signal input.

See Fig. 7-9 for reference, in which each of the sections to the right and left to the center vertical line of the screen are divided into three blocks to describe the picture movements.

- Center–line adjustment in the Horizontal Direction

See Table 7-1 for the picture movements and general information on this adjustment.

This adjustment consists of H-SKEW, H-BOW, H-4TH BOW and H-STATIC to correct the overall picture. Adjust the center vertical line so that it is not distorted and is straight and perfectly vertical.

The center vertical line does not move when adjusting the other items. Use the center vertical line set through this adjustment as reference for the other adjustments. After adjusting the center line, adjust the screen sections to the right and left of the center line.

Note that there may be some deviation in the overall picture if this adjustment is performed alone. Finely adjust the picture with subsequent adjustments.

Caution

Be sure to adjust H-STATIC by changing the data value within the range (010 to -010) of the telop indication in CONVER ADJ mode of FACTORY ADJ mode. If this range is exceeded, the convergence assembly may be damaged. If the adjustment is not possible within the range of 010 to -010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust H-STATIC.

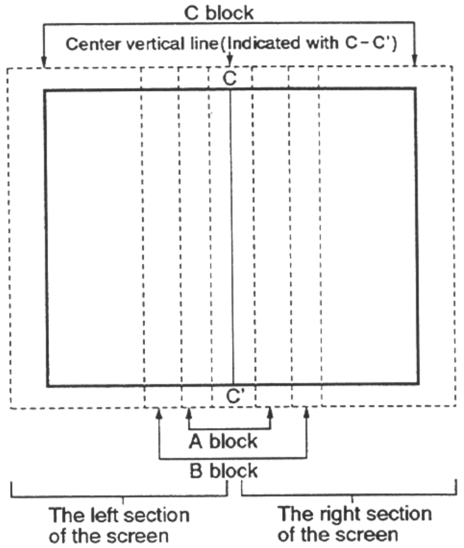
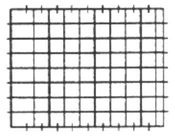
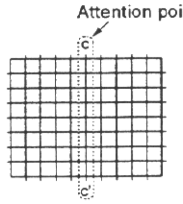
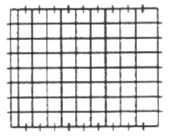
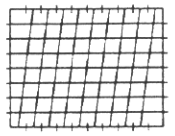
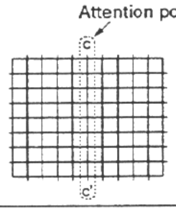
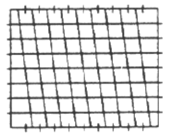
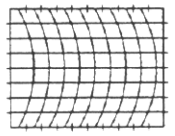
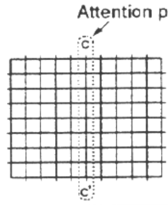
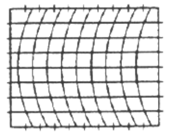
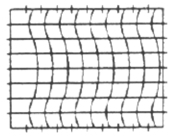
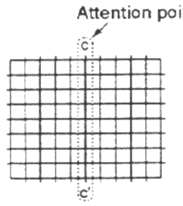
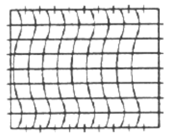

C block
Center vertical line(Indicated with C-C')
C
C'
A block
B block
The left section of the screen
The right section of the screen

Fig. 7-9 Screen Divisions for Horizontal Adjustment

Table 7-1 Center-line Adjustment in the Horizontal Direction

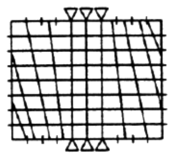
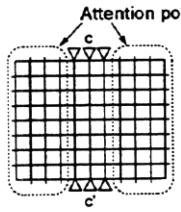
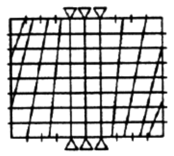
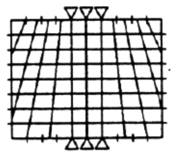
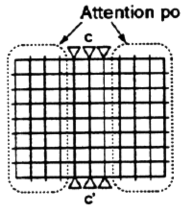
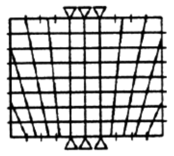
Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-STATIC *1				Center vertical line	Move the vertical line at the attention point on the screen shown in the figure to the left to converge it in the green line which has been set for reference. This provides the reference position of the center vertical line for the convergence adjustment.		The overall picture moves in parallel in the same manner as with the user-convergence adjustment.
H-SKEW				Center vertical line	Eliminate the lean at the attention point on the screen shown in the figure to the left.	Adjust H-SKEW, H-BOW, H-4TH BOW repeatedly until the center vertical line is straight and is perfectly vertical. Adjust H-SKEW and H-4TH BOW so that the A blocks are in the optimal condition. (The lean and waving distortion in the A blocks cannot be eliminated with the other adjustments.)	The lean of the overall picture is corrected. As shown in the figure to the left, the overall picture is leaned.
H-BOW				Center vertical line	Adjust so that the bowed line at the attention point on the screen shown in the figure to the left is straight.		The bowed lines over the overall screen are corrected. All the vertical lines are bowed as shown in the figure to the left.
H-4TH BOW				Center vertical line	Adjust so that the wavy line in the attention-point on the screen shown in the figure to the left is straight.		The waving (fourth-order) distortion over the overall screen is corrected. As shown in the figure to the left, the whole picture is distorted in waves.

*1 : H-STATIC can be shifted for convenience while adjusting the other items. Be sure to adjust the other items in consideration of the shift in H-STATIC and then readjust H-STATIC. (Be sure to shift it within the telop indication range of 010 to -010.)

- Lean Adjustment in the Horizontal Direction

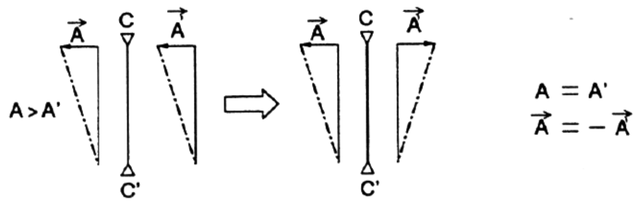
See Table 7-2 for the picture movements and general information on this adjustment.
The right and left sections of the screen are corrected with H-SUB KEY and H-KEY. Adjust the lean in the B and C blocks on the screen to eliminate.

Table 7-2 Lean adjustment in the Horizontal direction

Item	Deviating Picture	Corrected Picture Screen	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-SUB KEY *1	 ⇔		⇔ 	B and C blocks	Adjust to eliminate any lean at the attention-point blocks on the screen shown in the figure to the left. If the lean cannot be eliminated, set the screen to the status in which H-KEY has deviation as shown in Fig. 7-10, and adjust H-KEY.	Alternately adjust H-SUB KEY and H-KEY so that the lean in the B and C blocks is eliminated.	The lean in the B and C blocks on the screen is corrected. The right and left sections of the screen move in the same direction.
H-KEY	 ⇔		⇔ 	B and C blocks	Adjust to eliminate the lean in the attention-point blocks on the screen shown in the figure to the left.		The lean in the the B and C blocks on the screen is corrected. The right and left sections move symmetrically in relation to the center line.

*1 : H-SUB-KEY substantially differs from that of the previous-year model SD-P4053-K in picture movement and attention points.

Note:
▷———◁ :Line which does not move.



Note:
C▷———◁C' :Center vertical line
——— :Reference line
-·-·-·- :Leaned line

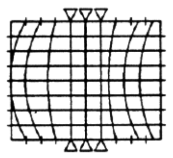
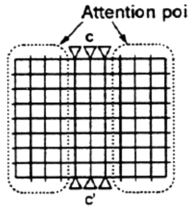
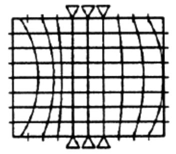
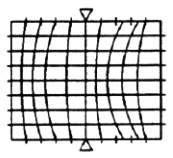
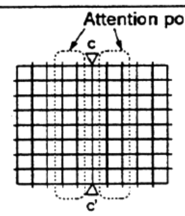
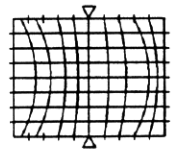
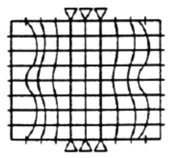
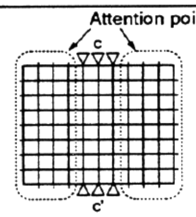
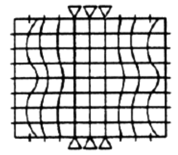
$\vec{A}$:Vector of the deviation in the left section of the screen
$\vec{A}'$:Vector of the deviation in the right section of the screen
A :Scalar quantity of the deviation in the left section of the screen
A' :Scalar quantity of the deviation in the right section of the screen

Fig. 7-10 Example of H-SUB KEY

- Distortion Adjustment in the Horizontal Direction (1)

See Table 7-3 for the picture movements and general information on this adjustment.
In this adjustment, the distortion on the screen is corrected with H-M S PIN, H-SUB PIN and H-4 S PIN while moving the right and left sections in the same direction. Adjust them so that the distortion in the right and left sections is eliminated and the vertical lines in both sections are straight. If straight lines cannot be obtained, first set the picture to the status in which it is symmetrically distorted and then adjust H-MID PIN, H-PIN and H-4TH PIN.

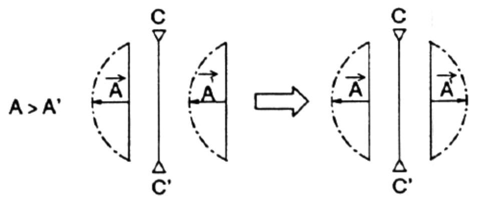
Table 7-3 Distortion Adjustment in the Horizontal Direction (1)

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-SUB PIN *1				B and C blocks (Especially C block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.	First adjust the A block with H-M S PIN and set the B block to a roughly-adjusted state. Then adjust the B and C blocks with H-SUB PIN. If the B and C blocks are distorted in waves, adjust H-4 S PIN. Repeat these adjustments until the vertical lines in both the left and right sections of the screen are straight. If straight lines cannot be obtained, move the right and left sections symmetrically as shown in Fig. 7-11 in the opposite directions to the same extent and adjust H-MID PIN, H-PIN and H-4TH PIN.	The bowed lines are corrected centering the C block on the screen. As shown in the figure to the left, the lines in the C block move more than those in the B block. The lines in the right and left sections move in the same direction.
H-M S PIN *1				A and B blocks (Especially B block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The bowed lines are corrected centering the B block on the screen. As shown in the figure to the left, the B block move more than the C block. The right and left sections move in the same direction.
H-4 S PIN				B and C blocks	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The wavy lines (fourth-order) are corrected in the B and C blocks on the screen. The right and left sections move in the same direction.

*1: H-SUB PIN and H-M S PIN work relative to each other. Be sure to adjust them alternately.

Note:
▷——◁ : Line which does not move.

Symmetrical movement



Note:
C▷——◁C': Center vertical line
———— : Reference line
–·–·–·– : Distorted line

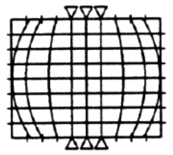
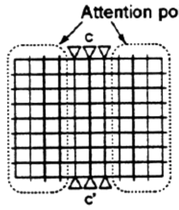
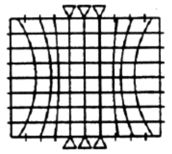
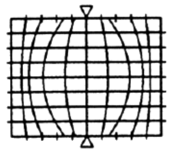
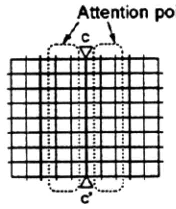
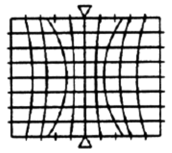
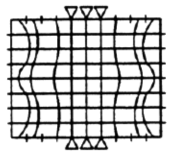
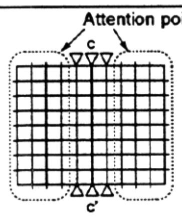
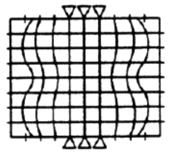
$\vec{A}$: Vector of the deviation in the left section of the screen
$\vec{A}'$: Vector of the deviation in the right section of the screen
A : Scalar quantity of the deviation in the left section of the screen
A' : Scalar quantity of the deviation in the right section of the screen

Fig. 7-11 Example of Distortion Adjustment in the Horizontal Direction (1)

- Distortion Adjustment in the Horizontal Direction (2)

See Table 7-4 for the picture movements and general information on this adjustment.
In this adjustment, the distortion on the screen is corrected with H-MID PIN, H-PIN and H-4TH PIN while moving the right and left sections of the screen symmetrically in relation to the center line. Adjust so that the distortion in the right and left sections is eliminated and the vertical lines in both sections are straight.

Table 7-4 Distortion Adjustment in the Horizontal Direction (2)

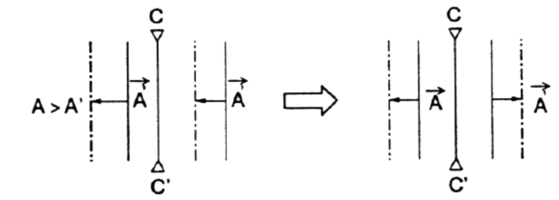
Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-PIN *1				B and C blocks (Especially C block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.	First adjust the A blocks with H-MID PIN and set the B blocks to a roughly-adjusted state. Then adjust the B and C blocks with H-PIN. If there is waving distortion, adjust H-4TH PIN. Repeat these adjustments until the vertical lines in both the left and right sections of the screen are straight.	The bowed lines are corrected centering the C block on the screen. As shown in the figure to the left, the C block move more than the B block. And the right and left sections move symmetrically in relation to the center line.
H-MID PIN *1				A and B blocks (Especially B block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The bowed lines are corrected centering the B block on the screen. As shown in the figure to the left, the B block move more than the C block. And the right and left sections move symmetrically in relation to the center line.
H-4TH PIN				B and C blocks	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The wavy lines (fourth-order) are corrected in the B and C blocks on the screen. As shown in the figure to the left, and the right and left sections move symmetrically in relation to the center line.

*1: H-PIN and H-MID PIN work relative to each other. Be sure to adjust them alternately.

Note:
▷——◁ : Line which does not move.

- Line-Interval Adjustment in the Horizontal Direction

See Table 7-5 for the picture movements and general information on this adjustment.
In this adjustment, the intervals of the vertical lines are corrected with H-4TH LIN, H-LIN, H-SIZE and H-SUB LIN. Converge the vertical lines in the right and left sections of the screen in the green vertical lines which have been set for reference.
The differences between H-LIN, H-4TH LIN, H-SIZE and H-SUB LIN are shown in Table 7-6.



$A = A'$

$\vec{A} = -\vec{A'}$

Note:

C▷——◁C' : Center vertical line
—— : Reference line
- - - - - : Deviating line

$\vec{A}$: Vector of the deviation in the left section of the screen
$\vec{A'}$: Vector of the deviation in the right section of the screen
A : Scalar quantity of the deviation in the left section of the screen
A' : Scalar quantity of the deviation in the right section of the screen

Fig. 7-12 Example of Line-Interval Adjustment in the Horizontal Direction

Table. 7-6 Difference Between Adjustment Items

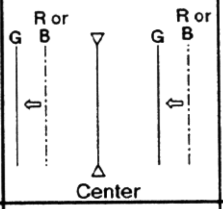
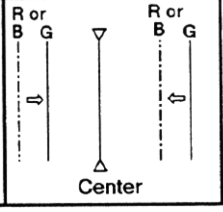
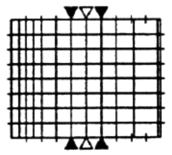
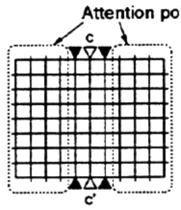
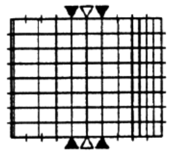
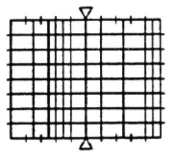
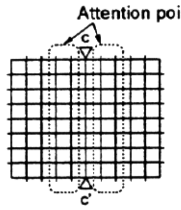
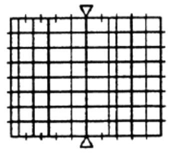
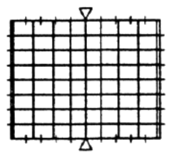
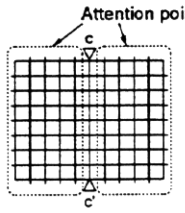
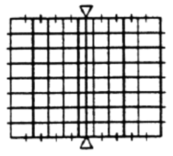
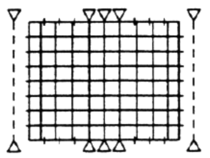
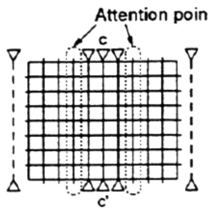
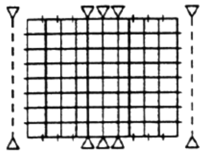
Item	Screen Example	Remarks
H-4TH LIN and H-LIN		H-4TH LIN and H-LIN should be adjusted when the right and left sections of the screen show deviation in the same direction.
H-SIZE and H-SUB LIN		H-SIZE and H-SUB LIN should be adjusted when the right and left sections of the screen show deviation symmetrically in relation to the center line.

Table 7-5 Line-Interval Adjustment in the Horizontal Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-LIN *1	 ⇔	 ⇔		B and C blocks	Observe the movements with H-SIZE and H-SUB LIN and move the lines in the right and left sections in the opposite directions to the same extent. (See Fig. 7-12.)	First move the lines in the A blocks with H-4TH LIN and then those in the B and C blocks with H-LIN. Adjust them repeatedly until the optimum line intervals are obtained. *2	The line intervals are corrected centering the C block on the screen. As shown in the figure to the left, the lines in the right and left sections of the screen move centering the respective C block.
H-4 TH LIN *1	 ⇔	 ⇔		A and B blocks (Especially B block)	Observe the movements with H-SIZE and H-SUB LIN and move the lines in the right and left sections in the opposite directions to the same extent. (See Fig. 7-12.)		The line intervals are corrected centering the A and B blocks on the screen. As shown in the figure to the left, the lines in the right and left sections of the screen move centering the respective A and B block.
H-SIZE *2	 ⇔	 ⇔		A, B and C blocks	Converge the vertical lines in the green vertical lines which have been set for reference.	Adjust the vertical lines in the right and left sections of the screen with H-SIZE. If the lines cannot be converged in the B blocks, adjust H-SUB LIN.	The line intervals in the right and left sections (A, B and C blocks) of the screen are corrected. As shown in the figure to the left, the line intervals in the right and left sections of the screen change with the center line as the axis.
H-SUB LIN *2	 ⇔	 ⇔		B block	Converge the vertical lines in the attention-point blocks on the screen shown in the figure to the left in the green vertical lines which have been set for reference.		The line intervals in the B block on the screen are corrected. As shown in the figure to the left, the lines in the center of B block of the right and left sections move in the same manner as with H-SIZE.

*1: H-4TH LIN and H-LIN work relative to each other. Be sure to adjust them alternately.
*2: When convergence in the green lines is achieved with H-4TH LIN and H-LIN, further adjustments with H-SIZE and H-SUB LIN are not necessary.

Note:
▷——◁ : Line which does not move at all.
▶——◀ : Line which hardly moves.
▷- - - - - - - -◁ : Line which does not move out of the screen.

7.4.6 Picture Movements in Vertical Adjustments

The adjustments in the vertical direction are performed by applying the convergence correction signals to the vertical deviation to change the amount of correction. With these adjustments, the horizontal lines will move.

This section describes the picture movements and the adjusting points when adjusting each item using a cross hatch input.

See Fig. 7-13 for reference, in which each of the sections above and below the center horizontal line of the screen are divided into two blocks to describe the picture movements.

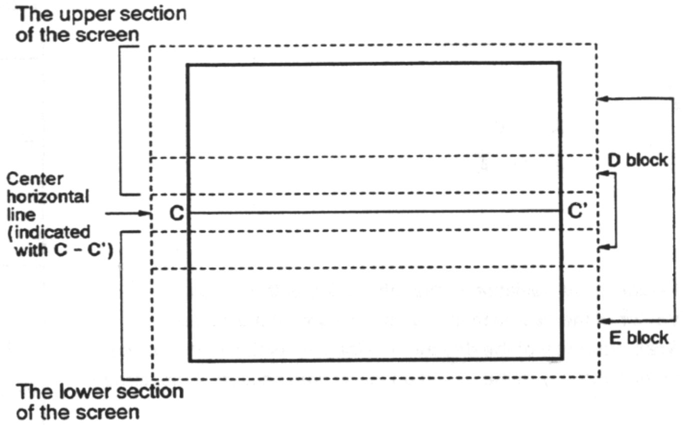

The upper section of the screen
Center horizontal line (indicated with C - C')
C
C'
D block
E block
The lower section of the screen

Fig. 7-13 Screen Divisions for Vertical Adjustments

- Center-line Adjustment in the Vertical Direction

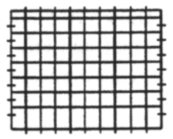
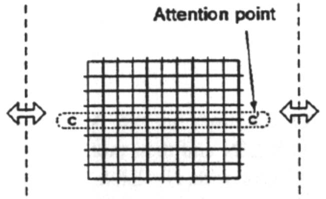
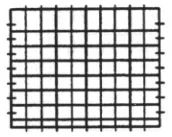
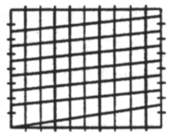
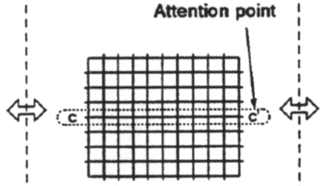
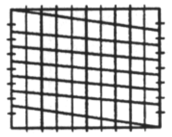
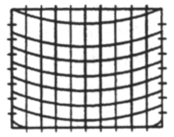
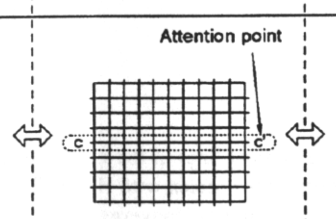
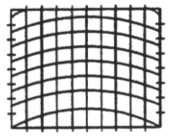
See Table 7-7 for the picture movements and general information on this adjustment.

This adjustment consists of V-SKEW, V-BOW and V-STATIC to correct the overall picture. Adjust the center horizontal line so that it is not distorted and is straight and perfectly horizontal. The center horizontal line does not move when adjusting the other items. Use the center horizontal line set through this adjustment as the reference for the other adjustments. After adjusting the center line, adjust the screen sections above and below the center line. Note that there may be some deviation in the overall picture if this adjustment is performed alone. Finely adjust the picture with subsequent adjustments.

Caution

Be sure to adjust V-STATIC by changing the data value within the range (010 to -010) of the telop indication in CONVER ADJ mode of FACTORY ADJ mode.
If this range is exceeded, the convergence assembly may be damaged. If the adjustment is not possible within the range of 010 to -010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust V-STATIC.

Table 7-7 Center-line Adjustment in the Vertical Direction

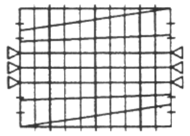
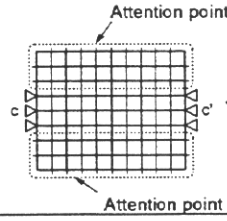
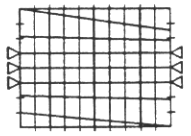
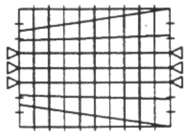
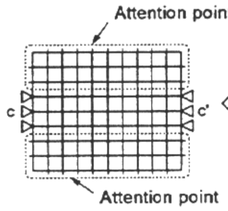
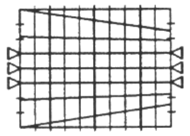
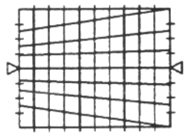
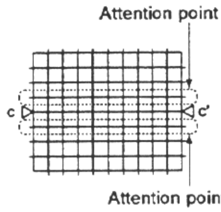
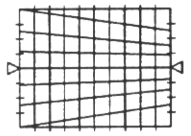
Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-STATIC *1				Center horizontal line	Move the horizontal line at the attention point on the screen shown in the figure to the left to converge it in the green line which has been set for the reference. This provides the reference position of the center horizontal line for the convergence adjustment.		The overall picture moves in parallel in the same manner as with the user-convergence adjustment.
V-SKEW				Center horizontal line	Eliminate the lean at the attention point on the screen shown in the figure to the left.	Adjust V-SKEW and V-BOW repeatedly until the center horizontal line is straight and is perfectly horizontal. Be sure to set to the range in which the D blocks can be adjusted with V - MID KEY. (For the D blocks, the distortion cannot be independently adjusted and the lean is eliminated only with V - MID KEY.)	The lean of the overall picture is corrected. As shown in the figure to the left, the overall picture is leaned.
V-BOW				Center horizontal line	Adjust so that the bowed line at the attention point on the screen shown in the figure to the left is straight.		The bowed lines over the screen are corrected. All the horizontal lines are bowed as shown in the figure to the left.

*1:V-STATIC can be shifted for convenience while adjusting the other items. Be sure to adjust the other items in consideration of the shift in V-STATIC and then readjust V-STATIC. (Be sure to shift it within the telop indication range of 010 to -010.)

- Lean Adjustment in the Vertical Direction

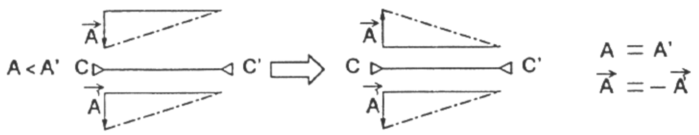
See Table 7-8 for the picture movements and general information on this adjustment.
In this adjustment, lean of the picture is corrected. Adjust V-SUB KEY, V-MID KEY and V-KEY to eliminating any lean in the upper and lower sections of the screen.

Table 7-8 Lean Adjustment in the Vertical Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-SUB KEY *2				E block	Adjust to eliminate the lean in the attention-point blocks on the screen shown in the figure to the left. If the lean cannot be eliminated, set the screen to the status in which V-KEY has deviation as shown in Fig. 7-14, and adjust V-KEY.	First adjust V-MID KEY so that the lean in the D block is eliminated. Then adjust V-SUB KEY and V-KEY so that the lean in the E block is eliminated. Repeat these adjustments until any lean in the upper and lower sections of the screen is eliminated.	The lean in the E block of the screen is corrected. The lines in the upper and lower sections of the screen move in the same direction.
V-KEY *1				E block	Adjust to eliminate the lean in the attention-point blocks on the screen shown in the figure to the left.		The lean in the E block of the screen is corrected. The upper and lower sections move symmetrically in relation to the center line.
V-MID KEY *1				D block	Adjust to eliminate any lean at the attention-point blocks on the screen shown in the figure to the left.		The lean in the upper and lower sections (D and E blocks) of the screen is corrected. The upper and lower sections move symmetrically in relation to the center line.

*1: V-MID KEY and V-KEY work relative to each other. Be sure to adjust them alternately.
*2: V-SUB-KEY substantially differs from that of the previous-year model SD-P4053-K in picture movement and attention points.

Note:
▷————◁ : Line which does not move.



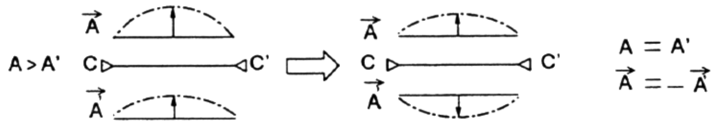
Note:
▷————◁ : Center horizontal line
———— : Reference line
-·-·-·-·- : Leaned line

$\vec{A}$: Vector of the deviation in the upper section of the screen
$\vec{A}$: Vector of the deviation in the lower section of the screen
A : Scalar quantity of the deviation in the upper section of the screen
A' : Scalar quantity of the deviation in the lower section of the screen

Fig. 7-14 Example of Vertical Lean Adjustment

- Distortion Adjustment in the Vertical Direction

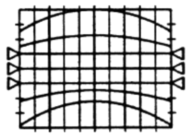
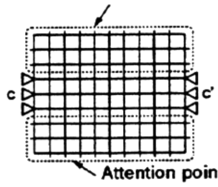
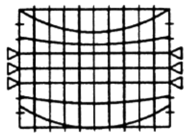
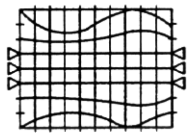
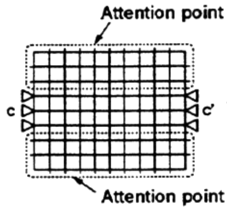
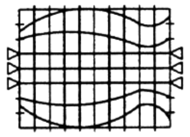
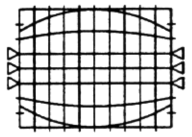
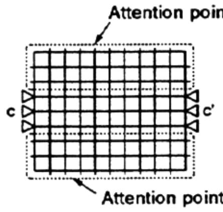
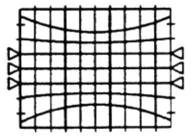
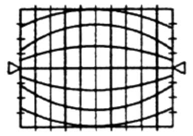
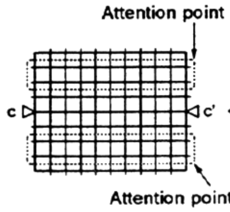
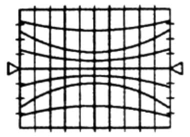
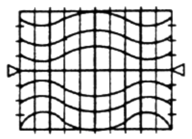
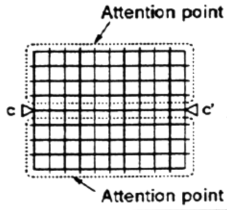
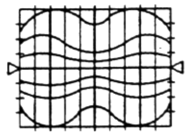
See Table 7-9 for the picture movements and general information on this adjustment.
In this adjustment, distortion on the screen is corrected. While adjusting V-SUB PIN, the upper and lower sections of the screen move in the same direction. While adjusting V-MID PIN, V-PIN, V-S C PIN and V-4TH PIN, the upper and lower sections move symmetrically in relation to the center line. Adjust them so that the distortion in the upper and lower sections of the screen is eliminated and the horizontal lines in both sections are straight.



Note:
C▷————◁C' : Center horizontal line
———— : Reference line
-.-.-.-.- : Distorted line
$\vec{A}$: Vector of the deviation in the upper section of the screen
$\vec{A}$: Vector of the deviation in the lower section of the screen
A : Scalar quantity of the deviation in the upper section of the screen
A' : Scalar quantity of the deviation in the lower section of the screen

Fig. 7-15 Example of V-SUB PIN Adjustment

Table 7-9 Distortion Adjustment in the Vertical Direction

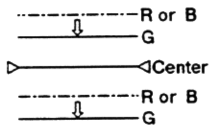
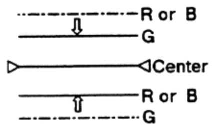
Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-SUB PIN				E block	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight. If straight lines cannot be obtained, move the upper and lower sections as shown in Fig. 7-15 in the opposite directions to the same extent from the center horizontal line. Adjust with V-PIN so that the lines are straight.		The bowed lines are corrected in the E block of the screen. As shown in the figure to the left, the upper and lower sections move in the opposite directions.
V-S C PIN				E block	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.	First adjust D block with V-MID PIN while setting the center-line side of E blocks to a roughly-adjusted state. Then adjust E block with V-PIN. If there is waving distortion, adjust V-4TH PIN and V-S C PIN. Repeat these adjustments until all the horizontal lines in both upper and lower sections of the screen are straight.	The wavy lines (third-order) are corrected in the E block on the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.
V-PIN				E block	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The bowed lines are corrected in the E block on the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.
V-MID PIN				D block and the center line side of E block. (Especially the center line side of the E block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The bowed lines are corrected on the center line side of E block on the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.
V-4TH PIN				D and E blocks	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The wavy lines (fourth-order) are corrected in the upper and lower sections (D and E blocks) of the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.

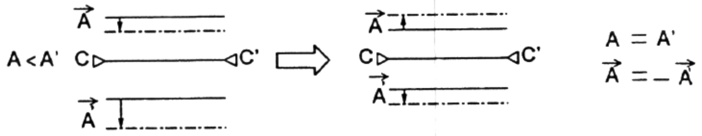
Note:
▷————◁ : Line which does not move at all.

- Line-Interval Adjustment in the Vertical Direction

See Table 7-10 for the picture movements and general information on this adjustment.
In this adjustment, the intervals of the horizontal lines in the upper and lower sections of the screen are corrected with V-LIN, V-SIZE and V-SUB LIN. Converge the horizontal lines in the upper and lower sections of the screen in the green horizontal lines which have been set for reference.
The differences between V-LIN, V-SIZE and V-SUB LIN are shown in Table 7-11.

Table. 7-11 Difference Between Adjustment Items

Item	Screen Example	Remarks
V-LIN		V-LIN should be adjusted when the upper and lower sections of the screen show deviation in the same direction.
V-SIZE and V-SUB LIN		V-SIZE and V-SUB LIN should be adjusted when the upper and lower sections of the screen show the upper and lower sections move symmetrically in relation to the center line.

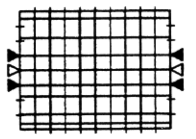
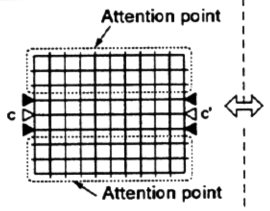
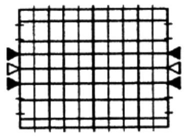
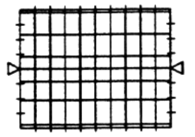
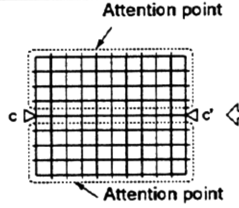
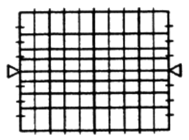
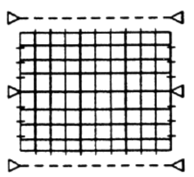
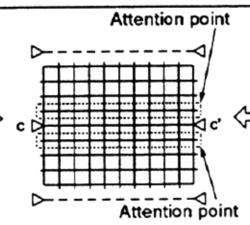
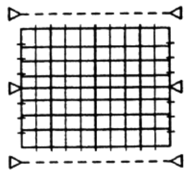


Note:
▷——◁ : Center horizontal line
——— : Reference line
-·-·-·- : Deviating line

$\vec{A}$: Vector of the deviation in the upper section of the screen
$\vec{A}'$: Vector of the deviation in the lower section of the screen
A : Scalar quantity of the deviation in the upper section of the screen
A' : Scalar quantity of the deviation in the lower section of the screen

Fig. 7-16 Example of V-LIN Adjustment

Table 7-10 Line-Interval Adjustment in the Vertical Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-LIN				E block	Observe the movements with V-SIZE and V-SUB LIN and move the lines in the upper and lower sections in the opposite directions to the same extent. (See Fig. 7-16.) When the convergence on the green lines is achieved, further adjustments with V-SIZE and V-SUB LIN are not necessary.		The line intervals are corrected centering the D and E blocks on the screen. As shown in the figure to the left, the lines in the upper and lower sections of the screen move centering the respective E block.
V-SIZE				D and E blocks	Converge the horizontal lines in the green horizontal lines which have been set for the reference.	Adjust the horizontal lines in the upper and lower sections of the screen with V - SIZE. If the lines in the D block cannot be converged, adjust V - SUB LIN.	The line intervals in the upper and lower sections (D and E blocks) of the screen are corrected. As shown in the figure to the left, the line intervals in the upper and lower sections of the screen change with the center line as the axis.
V-SUB LIN				D block	Converge the horizontal lines in the attention-point sections in the green horizontal lines which have been set for reference.		The line intervals in the D block on the screen are corrected. As shown in the figure to the left, the lines in the upper and lower sections move centering the respective D block in the same manner as with V-SIZE.

Note:
▷——◁ : Line which does not move at all.
▶——◀ : Line which hardly moves.
▷- - - - - - - -◁ : Line which does not move out of screen.

7.5 TUNER SECTION

- No adjustment required when replacing the assembly.
- Perform the adjustment after the video and control section adjustments.
- Connection diagram is refered to Fig. 7-17.
- Adjustment points and test points are shown in Fig. 7-6.
- Perform the adjustment set to the TEST mode (Note 1).
- Perform the adjustment by using the channel 9 unless otherwise noted.
- Video and audio **input signals are described in the** below.

  Ⓝ; **No signal**

  Video signal

  V①; fv=EIA color bar, 60dBμV

  Audio signal (STEREO);

  dbx noise reduction ON, PRE-EMPHASIS ON

  S①; f_A=300Hz, 30% MOD,
  L ch (or R ch) only, 54dBμV

Note 1;

How to set the TEST mode.

- Short-circuit TP-TEST and GND in the TUNER-VIDEO assembly.
- Disconnect the AC power cord from the AC outlet, then connect it again.

How to release the TEST mode.

- Release the short-circuit TP-TEST and GND in the TUNER-VIDEO assembly.
- Disconnect the AC power cord from the AC outlet, then connect it again.

Audio System

Step No.	Adjustment Item	Input Signal		Adjustment Point	Adjustment Procedure
		Video	Audio		
1	dbx filter adjustment	Ⓝ	Ⓝ	VR1304 (V)	Input the signal of 22.9kHz/245mV to TP.P1304, and adjust TP.P1305 output to minimum.
2	VCO adjustment	Ⓝ	Ⓝ	——	Measure the DC voltage of TP.P1303 with no input signal.
3		Ⓝ	Ⓝ	VR1303 (V)	Input the signal of 15.734kHz/48mV to TP.P1304, and adjust the DC voltage of TP.P1303 to the voltage measured in step 2.
4	Separation adjustment	V①	S①	VR1301 (V)	Adjust the output of the OUTPUT REC terminal on the rear panel to minimum level. (Adjust the R ch level becomes minimum at the Lch input and the L ch level becomes minimum at the R ch input.)
5					
6	Repeat steps 4 and 5 to obtained best separation.				

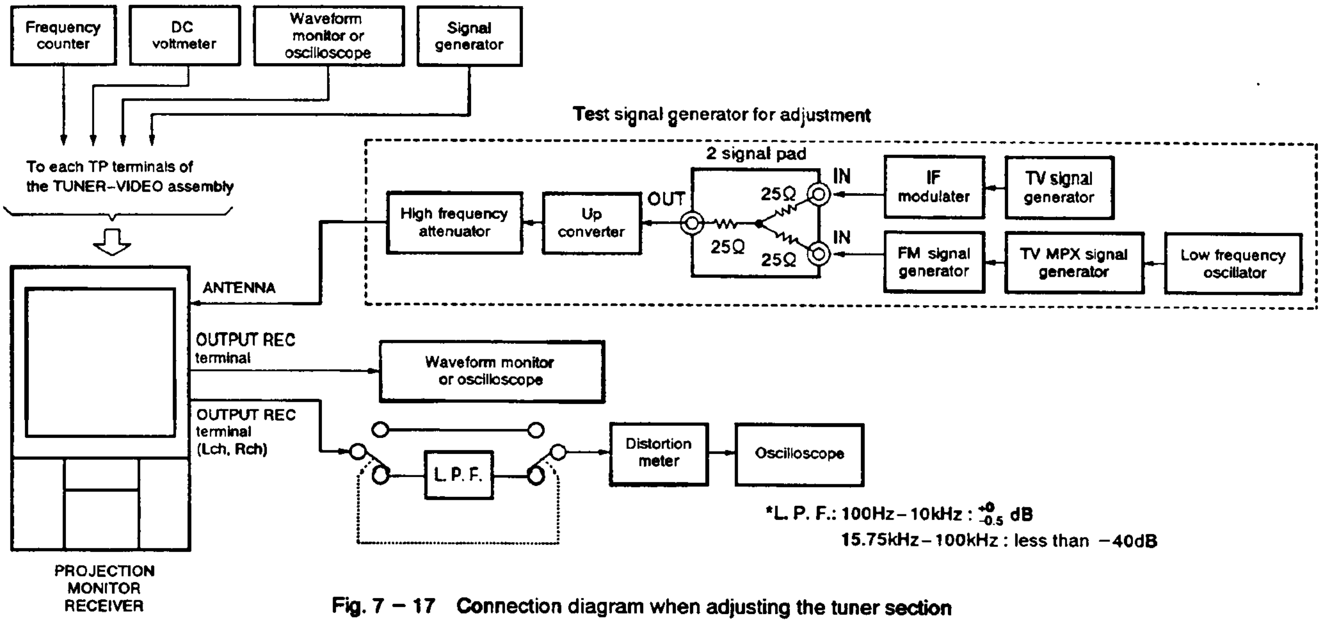
7.6 DOLBY PRO LOGIC SURROUND SYSTEM (75 FAMILY ONLY)

- Set the model as described in the below.

  Dolby mode: PRO LOGIC (Dolby Pro Logic Surround)

  PRO LOGIC adjustment mode: STANDARD

Step No.	Adjustment Item	Input Signal	Adjustment Point	Adjustment Procedure
1	**Dolby level adjustment**	L ch: 1kHz R ch: 1kHz of reverse phase with L ch.	——	Set the function to LD and input the following signal to L and R ch input terminals. At this time, set the input signal at connector F1 pin15 (SIN) to 300mVrms.
2			VR1901 (D)	Adjust the level of connector F1 pin 1 (DELAY OUT) to 283.2mV ± 1.0dB.


Frequency counter
DC voltmeter
Waveform monitor or oscilloscope
Signal generator
To each TP terminals of the TUNER-VIDEO assembly
Test signal generator for adjustment
2 signal pad
High frequency attenuator
Up converter
OUT
IN
IN
25Ω
25Ω
25Ω
IF modulater
TV signal generator
FM signal generator
TV MPX signal generator
Low frequency oscillator
ANTENNA
OUTPUT REC terminal
Waveform monitor or oscilloscope
OUTPUT REC terminal (Lch, Rch)
L. P. F.
Distortion meter
Oscilloscope
PROJECTION MONITOR RECEIVER

*L. P. F.: 100Hz - 10kHz : $^{+0}_{-0.5}$ dB
15.75kHz - 100kHz : less than −40dB

Fig. 7 - 17 Connection diagram when adjusting the tuner section

8. REPLACING THE CRT ASSEMBLY

Serviceman Warning
When replacing the CRT assembly, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

The anode cables of the CRT assembly R, G, and B in PROJECTION MONITOR RECEIVER are connected in series as shown in Fig. 8-1.
When replacing the CRT assembly, the anode cable have to be cut.

Note: Since the anode cables for the CRT assembly to service supplies are only available in half lengths, either cut longer lengths, or join older lengths of cable to ensure that the original cable length is used.

Table 8-1 Cable disconnecting methods

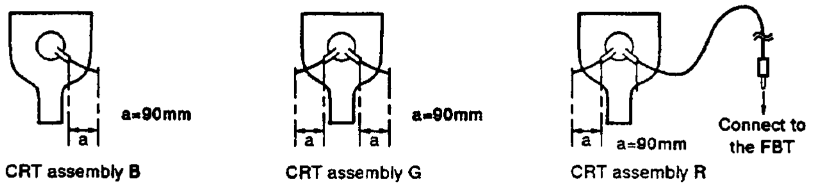
Cable	Replacement CRT assembly		
	When CRT assembly B is replaced	When CRT assembly G is replaced	When CRT assembly R is replaced
Cable ⓐ	——	——	Disconnect the anode cable from the FBT. (Refer to page 138.)
Cable ⓑ	Leave it as is	Cut a place 20mm from the exact center towards the CRT assembly G	Cut a place 20mm from the exact center towards the CRT assembly R
Cable ⓒ	Cut a place 20mm from the exact center towards the CRT assembly B	Cut a place 20mm from the exact center towards the CRT assembly G	Leave it as is

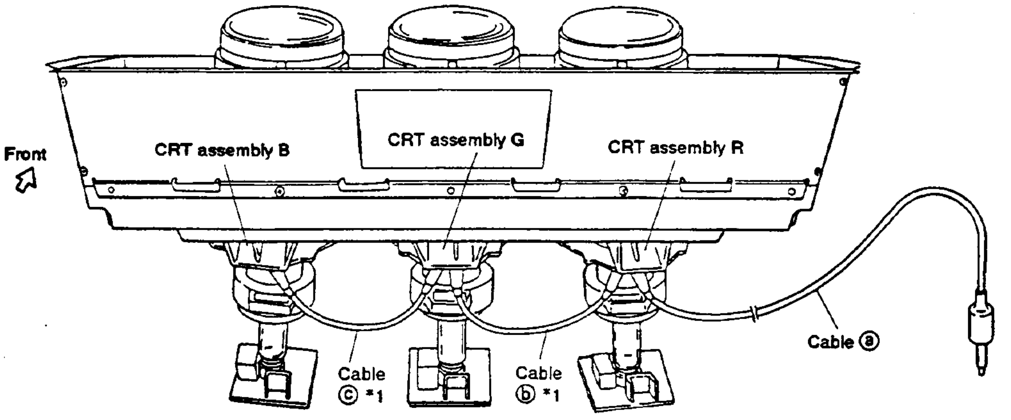
Note: Do not cut other cables by mistake.

8.1 WHEN REPLACING THE CRT ASSEMBLY

Unplug the AC plug and let the unit discharge for more than 1 minute, then cut the anode cable according to table 8-1.

Each CRT assembly supplied as a spare part is as shown below.





*1: Length of cable ⓒ and ⓑ is 180mm.

Fig. 8-1 Connection diagram of the each CRT assemblies

8.2 ANODE CABLE SHEATH PEELING

- Peel the sheath of the end of cut anode cable and new anode cable.
- The anode cable structure is outlined in Fig. 8-2. Note that the sheath consists of two layers.
- The method used to peel the sheath back is illustrated in Fig. 8-3. Use a cutter knife, taking care not to damage the core leads.

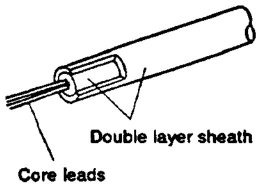
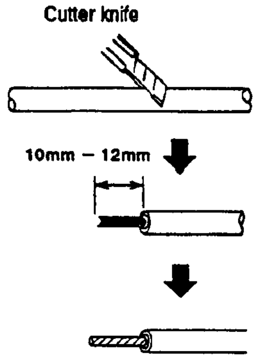


Fig. 8-2 Anode cable structure



Using a cutter knife(and taking care not to damage core leads), remove 10 to 12mm of sheath.

Twist core leads

Pre-soldering desirable

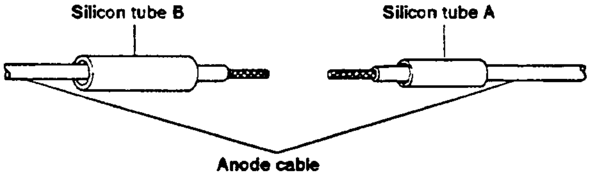
Fig. 8-3 Anode cable sheath peeling

8.3 ANODE CABLE JOINING PROCEDURE

- Join the cut anode cable and the new anode cable to restore as shown in Fig. 8-1. Also, when replacing the FBT, refer to page 138.
- Slip two silicon tubes(silicon tubes A and B in Fig. 8-4) over the anode cables before making the join.
- The silicon adhesive is applied to guard the cable core leads from external air. Apply binder liberally. After completing the joint (at step ⑩ in Fig. 8-4-1 thru 3), check that there is no hole in the silicon binder and the tube interior cannot be seen.
- Leave the silicon adhesive to harden overnight.

CAUTION : For the silicon adhesive, be sure to use silicon adhesive part no. GYL-017.

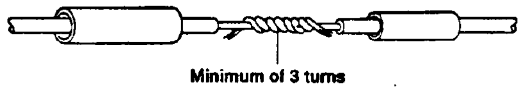
①



Slip silicon tube A and B over anode cable (either side)

NOTE: Silicon tube A: Short thin contracting tube } Supplied when ordering CRT assembly
Silicon tube B: Long thick contracting tube } or the anode cable kit.

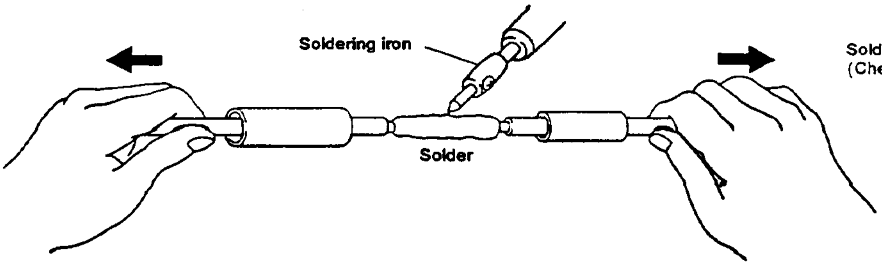
②



Twist cables together through at least 3 turns.

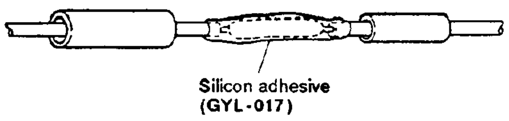
Fig. 8-4-1 Anode cable joining procedure(1)

③


Soldering iron
Solder

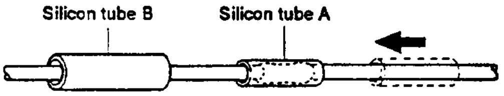
Solder the joint, and pull at both ends.
(Check against faulty soldering.)

④


Silicon adhesive
(GYL-017)

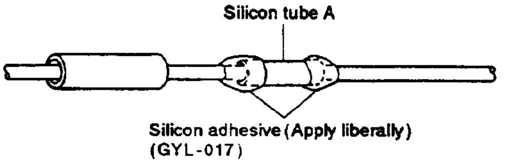
Apply silicon adhesive liberally.
(Cover the entire soldered section and remaining bare core leads.)

⑤


Silicon tube B
Silicon tube A

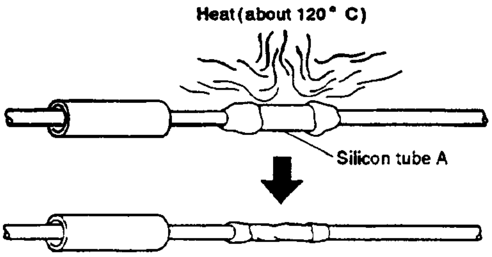
Cover the silicon adhesive section with silicon tube A.
(With the center of the silicon tube A corresponding to the solder section)

⑥


Silicon tube A
Silicon adhesive (Apply liberally)
(GYL-017)

Apply liberal amounts of silicon adhesive to both ends of silicon tube A

⑦

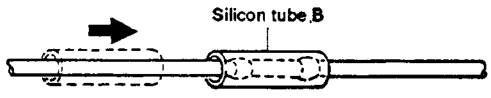

Heat (about 120° C)
Silicon tube A

Apply heat (about 120° C) to contract silicon tube A.

Note: Use an industrial drier or soldering iron as the heat source.

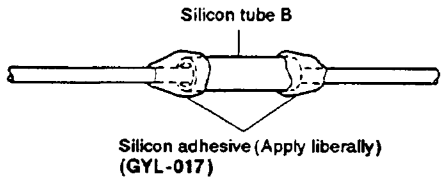
Check that the silicon adhesive has been applied evenly without air pockets etc. If there are any pockets etc, apply additional silicon adhesive.

⑧


Silicon tube B

Slip silicon tube B over silicon tube A.
(With the center of silicon tube B also corresponding to the solder section)

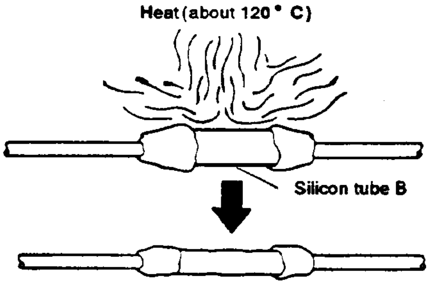
⑨


Silicon tube B
Silicon adhesive (Apply liberally)
(GYL-017)

Apply liberal amounts of silicon adhesive to both ends of silicon tube B.

Fig. 8-4-2 Anode cable joining procedure (2)

⑩

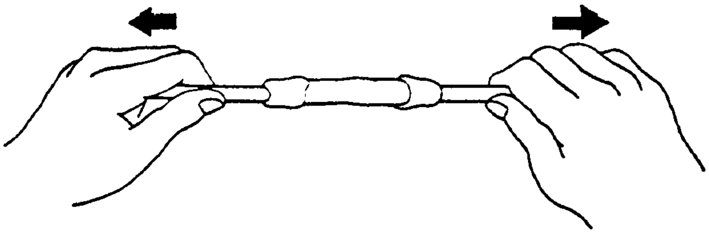


Apply heat(about 120° C)to contract silicon tube B.

Note: Use an industrial drier or soldering iron as the heat source.

Check that the silicon adhesive has been applied evenly without air pockets etc. If there are any pockets etc, apply additional silicon adhesive.

⑪



Gently tug both ends to check that the cables do not separate.

Fig. 8-4-3 Anode cable joining procedure(3)

9. HOW TO CLEAN

Note:
Cleaning liquid B4(GEM1004) for LD players is usable for projection TV display.

Jigs

Use the following for cleaning optical components such as lens, mirror and screen.

Name	Number
Cleaning cloth, MINIMAX	GED-009
Cleaning liquid, B4	GEM1004

Note: Wear gloves when holding optical components lest you should make fingerprints.

9.1 Method of Cleaning Lenses and Mirrors

1. Remove dust with an airbrush.
2. Apply some cleaning liquid to the cloth and wipe the dirt off with the cloth.
3. If the component is not so dirty, moisten it with breath and wipe it with the cloth.

Note: Wipe it softly lest you should scratch the lens.

9.2 Screen Cleaning

1. Apply the cleaning liquid to the above cloth or similar soft cloth and wipe the dirt off with the cloth.
2. Apply de-electrifier to the rear-surface or fresnellens side of the screen, or dust will stick on it.

Note:
(1) Apply no alcoholic liquid such as thinner and benzine to the front surface lest the black printing on the rear surface should come off.
(2) Use Ascetete-cloth tape, GYH1001, for sticking Fresnel lens and lenticular sheet together.

10. HOW TO CHECK POWER DOWN

- Checking method : Observe the voltage at each TP using an oscilloscope or a tester when the power is down. Check the TP where a voltage of 1 to 2 V is measured just before the power is down, and refer to the table below to confirm the defective block. Then turn the unit on again by inserting the plug of the AC power cord to the receptacle.

Assembly Name	TP No.	TP Name	Defect circuit block	Example of the defect
POWER SUPPLY assembly	TP201	H.DEF	H.deflection block	• H. deflection yoke (L1 - L3) wires are breaked or the pattern of the portion of H. deflection output circuit is breaked. • Defects in the H. BLK circuit or H. deflection control circuit (periphery of IC201.). • H. OSC (IC602) is stopped. • H. OUT transistor (Q208) is opened.
	TP204	135V		• H. OUT transistor (Q208) is shorted.
	TP301	X-RAY	High voltage block	• High voltage control transistor (Q308) is shorted.
	TP302	135V		• High voltage output transistor (Q309) is shorted. • FBT (T302) is rare shorted. • FBT load of CRT etc. are shorted. • CRT drive transistors (Q2701, Q2731 and Q2761) are shorted.
		H.T	Power supply block	• Defects in the heater regulator circuit. (Periphery of Q110)
		V.AC	V. deflection block (CONVERGENCE assembly)	• Defects in the waveform generator IC (IC2304). • Defects in the V. OUT amp. IC (IC2601).
CONVERGENCE assembly	D2606 anode	V.DC	V. deflection block	• Defects in the waveform generator IC (IC2304). • Defects in the V. OUT amp. IC (IC2601).
TUNER-VIDEO assembly	TP1403	P.D	Audio block (TUNER-VIDEO assembly)	• Output coupling capacitors (C1429 and C1437) are shorted.
AUDIO assembly	D426 anode	–	Audio block (AUDIO assembly)	• Output coupling capacitors (C481 and C482) are shorted.

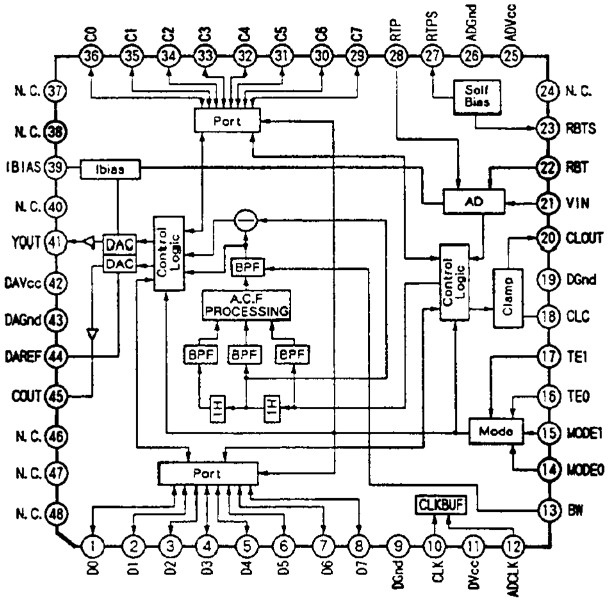
11. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ MC141621FU (IC3201)

• **Digital Comb Filter IC**

• Block Diagram


C0 36
C1 35
C2 34
C3 33
C4 32
C5 31
C6 30
C7 29
RTP 28
RTPS 27
ADGnd 26
ADVcc 25
N.C. 24
RBTS 23
RBT 22
VIN 21
CLOUT 20
DGnd 19
CLC 18
TE1 17
TE0 16
MODE1 15
MODE0 14
BW 13
D0 1
D1 2
D2 3
D3 4
D4 5
D5 6
D6 7
D7 8
DGnd 9
CLK 10
DVcc 11
ADCLK 12
N.C. 37
N.C. 38
IBIAS 39
N.C. 40
YOUT 41
DAVcc 42
DAGnd 43
DAREF 44
COUT 45
N.C. 46
N.C. 47
N.C. 48
Self Bias
Port
Ibias
AD
DAC
DAC
Control Logic
BPF
A.C.F PROCESSING
BPF
BPF
BPF
1H
1H
Control Logic
Clamp
Mode
Port
CLKBUF

• Pin Function

No.	Pin Name	Function
1 - 8	D0 - D7	Digital Input/Output interface 2. Normally, set to ground level.
9,19	DGnd	Ground for digital.
10	CLK	Clock input. Input the clock for AC coupling with the external capacitor. Minimum input level of clock is 200mVp-p in the Normal mode / C. C. F. mode.
11	DVcc	Power supply for digital.
12	ADCLK	Clock input for AD converter. Digital input comb filter mode and a port of test mode are effective only. Input level is CMOS level.
13	BW	Bandwidth of bandpass filter switching input for color signal. LOW level : narrow bandwidth
14,15	MODE0,1	Mode input. Set to ground level in the normal mode.
16,17	TE0,TE1	Test mode input. Normally, set to ground level.
18	CLC	Set the time constant of clamp.
20	CLOUT	Voltage output for clamp. Input signal is able to clamped which is connected to VIN and input the video signal for AC coupling.
21	VIN	AD converter input. Maximum input voltage is 3.3Vp-p.
22	RBT	Bottom reference input for AD converter.
23	RBTS	Bottom reference voltage supply pin for AD converter. Bottom reference voltage is supplied by connecting to RBT.
24	N.C.	Not used. Normally, set to ground level.
25	ADVcc	Power supply for AD converter.
26	ADGnd	Ground for AD converter.
27	RTPS	Top reference voltage supply pin for AD converter. Top reference voltage is supplied by connecting to RTP.
28	RTP	Top reference input for AD converter.
29 - 36	C7 - C0	Clamp level input / digital Input/Output interface 1.
37,38	N.C.	Not used. Normally, set to ground level.
39	IBIAS	Bias circuit current control for AD/DA converter. Normally, connect to DAGnd via the resistor.
40	N.C.	Not used. Normally, set to ground level.
41	YOUT	Luminance signal output.
42	DAVcc	Power supply for DA converter.
43	DAGnd	Ground for DA converter.
44	DAREF	Reference for DA converter. Normally, connect to DAGnd via the 0.1 μF ceramic capacitor.
45	COUT	Color signal output.
46 – 48	N.C.	Not used. Normally, set to ground level.

■ PD5219A (IC903)

• Control Microcomputer IC

● Pin Function

Note) I : CMOS input O : CMOS output N : N ch open dolein output

<table>
<tr><th>No.</th><th>Pin Name</th><th>I/O</th><th colspan="2">Function</th><th>Active</th></tr>
<tr><td>1</td><td>OSC1</td><td>I</td><td colspan="2" rowspan="2">Clock input and output for display.</td><td rowspan="2">–</td></tr>
<tr><td>2</td><td>OSC2</td><td>O</td></tr>
<tr><td>3</td><td>KEYIN</td><td>I</td><td colspan="2">Front control key scan signal input. Decipher the format signal of PD5136.</td><td>L</td></tr>
<tr><td>4</td><td>DPO
AFT
OPT</td><td>I</td><td colspan="2">Analog voltage input for DPO control. 16 stages.
Analog voltage input for AFT control. 3 stages.
Analog voltage input for OPTION. 6 stages.</td><td>–</td></tr>
<tr><td>5</td><td>REMIN</td><td>I</td><td colspan="2">Remote control signal input. Decipher the SR format signal.</td><td>L</td></tr>
<tr><td>6</td><td>ADSEL 1</td><td>O</td><td colspan="2">A/D switching output.
<table>
<tr><th></th><th>DPO</th><th>AFT</th><th>OPT</th></tr>
<tr><td>ADSEL – 1</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>ADSEL – 2</td><td>H</td><td>L</td><td>H</td></tr>
</table></td><td>–</td></tr>
<tr><td>7</td><td>COLOR</td><td>N</td><td colspan="2">PWM output for color level control.</td><td>H</td></tr>
<tr><td>8</td><td>TINT</td><td>N</td><td colspan="2">PWM output for tint level control.</td><td>H</td></tr>
<tr><td>9</td><td>CONTR</td><td>N</td><td colspan="2">PWM output for contrast level control.</td><td>H</td></tr>
<tr><td>10</td><td>BRIGHT</td><td>N</td><td colspan="2">PWM output for brightness level control.</td><td>H</td></tr>
<tr><td>11</td><td>SHARP</td><td>N</td><td colspan="2">PWM output for sharpness level control.</td><td>H</td></tr>
<tr><td>12</td><td>DETAIL</td><td>N</td><td colspan="2">PWM output for detail level control.</td><td>H</td></tr>
<tr><td>13</td><td>VOLUME</td><td>N</td><td colspan="2">PWM output for volume level control.</td><td>H</td></tr>
<tr><td>14</td><td>TONE/BAL
DL-VOL, BAL</td><td>N</td><td colspan="2">PWM output for sound quality control.
PWM output for DOLBY volume level control.</td><td>H</td></tr>
<tr><td>15</td><td>H SYNC</td><td>I</td><td colspan="2">Horizontal sync. count input for tuner reception. When the status in which there are 12 to 18 H-SYNC pulses in 1 msec continues 8 times, it is regarded that there is a broadcast. When any other status continues 6 times, it is regarded that there is no broadcast.</td><td>–</td></tr>
<tr><td>16</td><td>AC CLK</td><td>I</td><td colspan="2">AC clock detection input. Used for detection of AC power OFF. Dummy reset (software reset) is generated when no AC clock is supplied for 100 msec.</td><td>–</td></tr>
<tr><td>17</td><td>A MUTE</td><td>O</td><td colspan="2">Audio mute output. When selecting MUTE mode, switching input and turning power ON/OFF, Audio mute is output.</td><td>H</td></tr>
<tr><td>18</td><td>ADSEL 2</td><td>O</td><td colspan="2">A/D switching output.</td><td>–</td></tr>
<tr><td>19</td><td>4051 B</td><td>N</td><td colspan="2" rowspan="2">Switching output for multiplexer IC (TC4051BP) .
Switching for TONE/BAL./Dolby-VOL./Dolby-BAL.
<table>
<tr><th></th><th>Bass</th><th>Treble</th><th>Balance</th><th>Dolby-Volume</th><th>Dolby-Balance</th></tr>
<tr><td>Pin 20 (4051-A)</td><td>L</td><td>H</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>Pin 19 (4051-B)</td><td>L</td><td>L</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>Pin 23 (4051-C)</td><td>H</td><td>H</td><td>H</td><td>H</td><td>L</td></tr>
</table></td><td rowspan="2">–</td></tr>
<tr><td>20</td><td>4051 A</td><td>N</td></tr>
<tr><td>21</td><td>SCLK2</td><td>N</td><td>I²C serial transmission clock.</td><td rowspan="2">Use for EEPROM.</td><td rowspan="2">–</td></tr>
<tr><td>22</td><td>SOUT2</td><td>I/N</td><td>I²C serial data input and output.</td></tr>
<tr><td>23</td><td>4051 C</td><td>N</td><td colspan="2">Switching output for multiplexer IC (TC4051BP) .</td><td>–</td></tr>
<tr><td>24</td><td>SIN</td><td>I</td><td>Serial data input.</td><td rowspan="3">Used for PLL, Dolby, DSE, PINP and digital analyzer IC.</td><td rowspan="3">–</td></tr>
<tr><td>25</td><td>SCLK1</td><td>N</td><td>Serial clock.</td></tr>
<tr><td>26</td><td>SOUT1</td><td>N</td><td>Serial data output.</td></tr>
</table>

No.	Pin Name	I/O	Function	Active
27	CNVSS	–	Connect to VSS.	—
28	NC	O	Timing output terminal. (Open)	—
29	RESET	I	System reset. Reset is done by applying L for more than 0.95 μsec (when OSC=4.19 MHz).	L
30	X in	I	Input and output terminals for generating the main clock. Connect the ceramic resonator of 4.19 MHz.	—
31	X out	O		
32	VSS	–	Apply 0V to VSS.	—
33	CONV B-MUT	O	R, G and B MUTE output.	H
34	CONV G-MUT	O		H
35	CONV R-MUT	O		H
36	REC MUTE	O	REC MUTE output.	H
37	RELAY	O	Power relay control signal output. ON : "L", OFF : "H"	L
38	WIDE	O	Switching Cinema Wide/Normal. Wide : "H".	H
39	PSEL STB	O	Expander IC (TC4094BP) of the P IN P circuit strobe for switching the P IN P sub-picture.	H
40	PINP ENB	O	Used for the data transfer to P IN P IC (MB86153BPF).	H
41	V MUTE	O	VIDEO MUTE output.	H
42	CC RESET	O	Hard reset output for CCD microcomputer.	H
43	CC ENB	O	Data enable for CCD microcomputer.	L
44	PEXP STB	O	Port expander IC (M66320P) strobe for switching the input of Side Mute, Cinema Picture, PEAK ACL and antenna switching.	H
45	CONV MUTE	O	MUTE output of convergence IC (PM0002A)	L
46	CONV ENB	O	Data enable of convergence IC (PM0002A)	L
47	DSE STB	O	Expander IC (TC4094BP) strobe for switching the D.S.E.	H
48	DLBY STB	O	Expander IC (M66320P) strobe for switching the Dolby.	H
49	PLL ENB	O	Data enable of PLL IC (TD6359)	H
50	STEREO	I	Broadcast format deciding input.	L
51	SAP	I		L

	STEREO/SAP	SAP	STEREO	MONO
STEREO	L	H	L	H
SAP	L	L	H	H

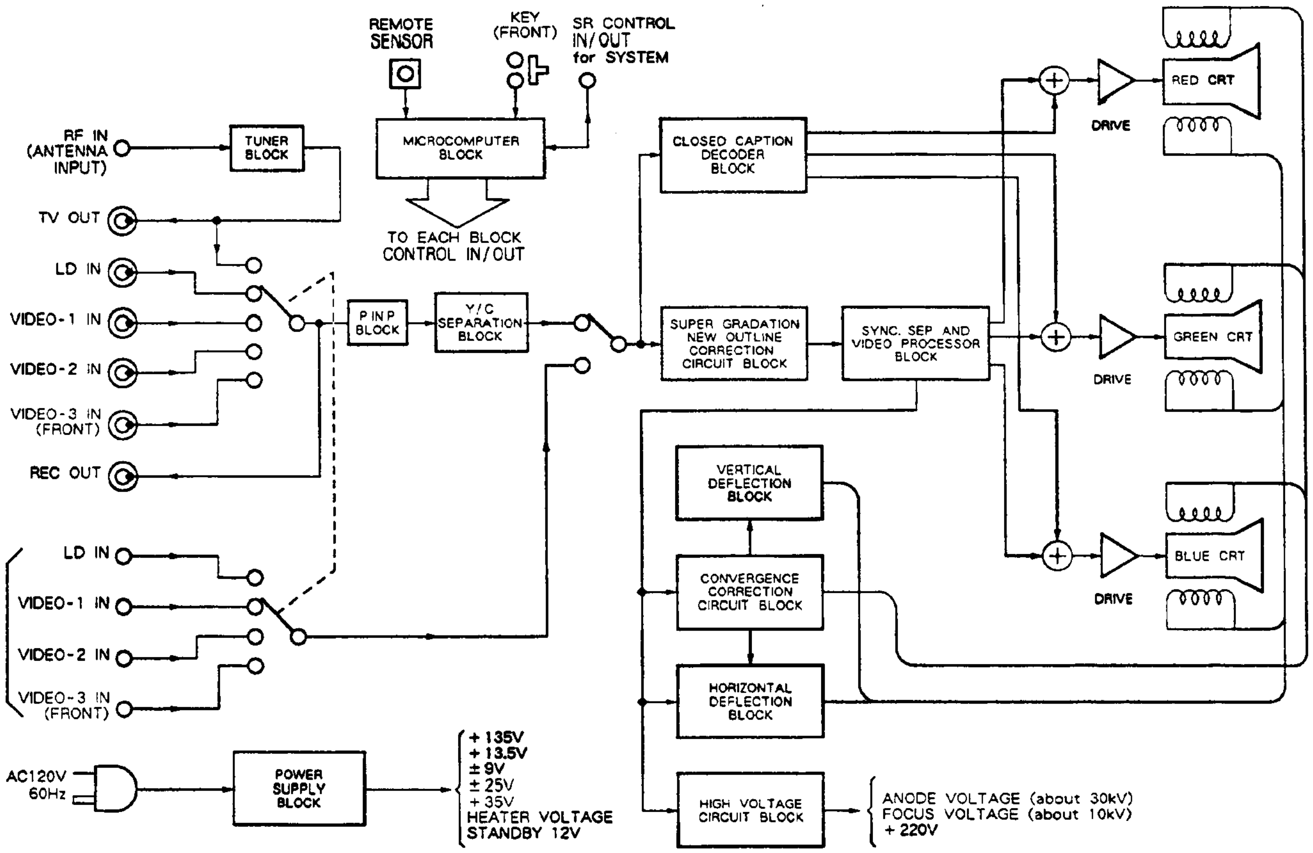
No.	Pin Name	I/O	Function	Active
52	MTS1	O	MTS mode output. Effective only when SAP is included in on-air signals. In other conditions, the logic in parentheses is used.	L
53	MTS0	O		L

	MAIN/SAP	MAIN	SAP	MONO
MTS0	L (L)	L	H (L)	H
MTS1	L (H)	H	L (H)	H

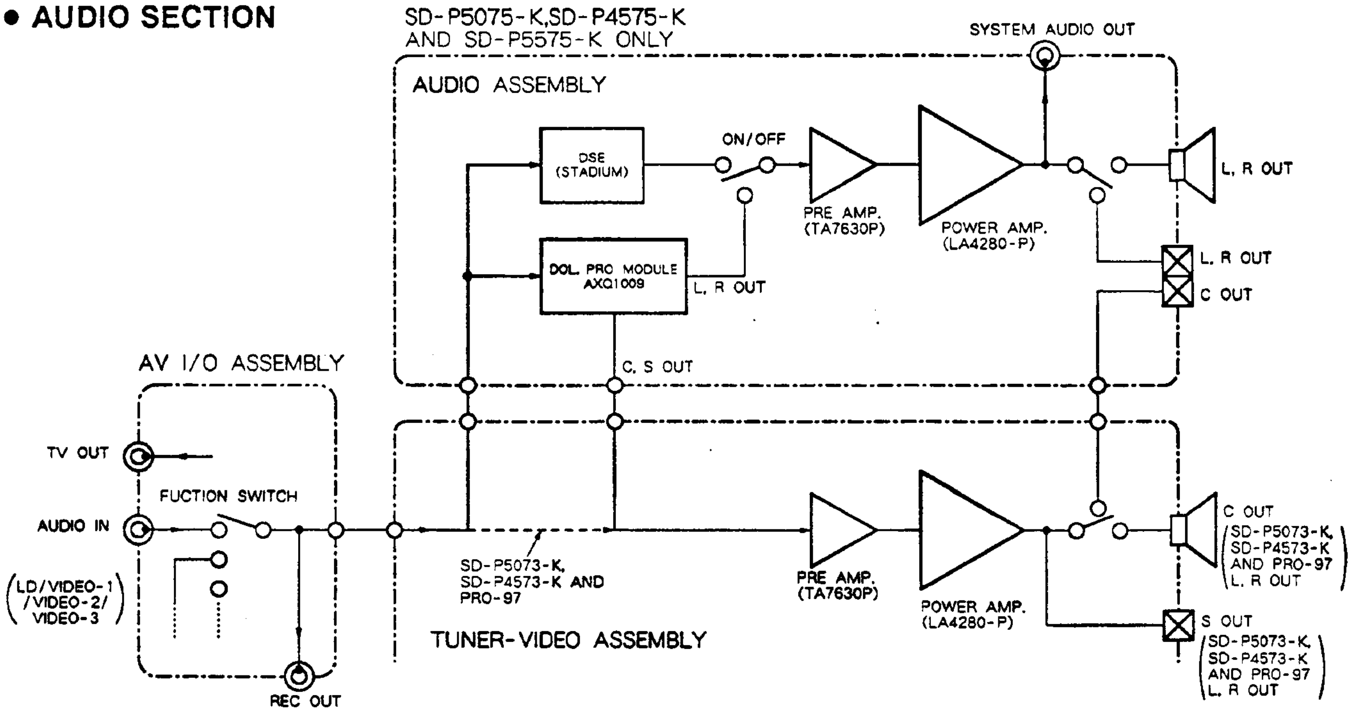
No.	Pin Name	I/O	Function	Active
54	TV MUTE	O	TV audio mute output.	L
55	TV TEST	I	Tuner test mode detection input.	L
56	TV LOCK	I	PLL lock detection input.	L
57	BLK OUT	O	Video output for OSD.	H
58	TEST CRS	O		H
59	B	O		H
60	G	O		H
61	R	O		H
62	VSYNC	I	Synchronizing signal input for OSD.	L
63	HSYNC	I		L
64	VDD	I	Apply +5V power supply.	–

12. BLOCK DIAGRAM

• VIDEO SECTION


REMOTE SENSOR
KEY (FRONT)
SR CONTROL IN/OUT for SYSTEM
RF IN (ANTENNA INPUT)
TUNER BLOCK
MICROCOMPUTER BLOCK
TO EACH BLOCK CONTROL IN/OUT
TV OUT
LD IN
VIDEO-1 IN
VIDEO-2 IN
VIDEO-3 IN (FRONT)
REC OUT
P IN P BLOCK
Y/C SEPARATION BLOCK
CLOSED CAPTION DECODER BLOCK
SUPER GRADATION NEW OUTLINE CORRECTION CIRCUIT BLOCK
SYNC. SEP AND VIDEO PROCESSOR BLOCK
RED CRT
GREEN CRT
BLUE CRT
DRIVE
DRIVE
DRIVE
VERTICAL DEFLECTION BLOCK
CONVERGENCE CORRECTION CIRCUIT BLOCK
HORIZONTAL DEFLECTION BLOCK
S-VIDEO
LD IN
VIDEO-1 IN
VIDEO-2 IN
VIDEO-3 IN (FRONT)
AC120V 60Hz
POWER SUPPLY BLOCK
+135V
+13.5V
±9V
±25V
+35V
HEATER VOLTAGE
STANDBY 12V
HIGH VOLTAGE CIRCUIT BLOCK
ANODE VOLTAGE (about 30kV)
FOCUS VOLTAGE (about 10kV)
+220V

• AUDIO SECTION


SD-P5075-K,SD-P4575-K AND SD-P5575-K ONLY
SYSTEM AUDIO OUT
AUDIO ASSEMBLY
DSE (STADIUM)
ON/OFF
PRE AMP. (TA7630P)
POWER AMP. (LA4280-P)
L, R OUT
DOL. PRO MODULE AXQ1009
L, R OUT
L, R OUT
C OUT
C, S OUT
AV I/O ASSEMBLY
TV OUT
FUCTION SWITCH
AUDIO IN
(LD/VIDEO-1 /VIDEO-2/ VIDEO-3)
REC OUT
SD-P5073-K, SD-P4573-K AND PRO-97
TUNER-VIDEO ASSEMBLY
PRE AMP. (TA7630P)
POWER AMP. (LA4280-P)
C OUT (SD-P5073-K, SD-P4573-K AND PRO-97 L, R OUT)
S OUT (SD-P5073-K, SD-P4573-K AND PRO-97 L, R OUT)

13. REMOTE CONTROL UNIT

NOTES:

- *The model name is indicated with the family name as shown below.*
  The 75 family includes SD-P5075-K, SD-P5575-K and SD-P4575-K.
  The 73 family includes SD-P5073-K and SD-P4573-K.

- 75 family : AXD1351 (CU-SD075)
- 73 family : AXD1352 (CU-SD076)
- PRO-97 : AXD1353 (CU-SD074)

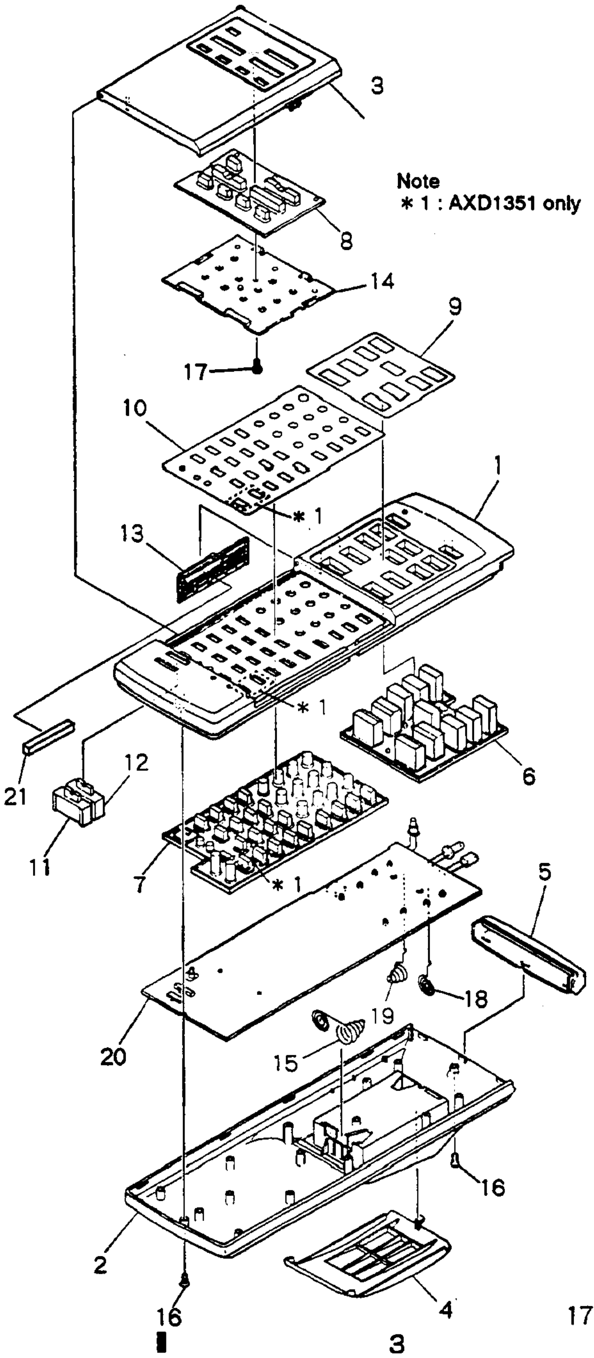
13.1 EXPLODED VIEW AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- ***Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.***

Parts List

Mark	No.	Description	Part No.
	1	CASE A (FOR AXD1351 AND AXD1352)	AZA1442
	1	CASE A (FOR AXD1353)	AZA1408
	2	CASE B	AZA1431
	3	DOOR (FOR AXD1351)	AZA1489
	3	DOOR (FOR AXD1352)	AZA1492
	3	DOOR (FOR AXD1353)	AZA1495
	4	BATTERY COVER	AZA1505
	5	FILTER	AZA1387
	6	RUBBER SHEET A	AZA1388
	7	RUBBER SHEET B (FOR AXD1351)	AZA1490
	7	RUBBER SHEET B (FOR AXD1352 AND AXD1353)	AZA1493
	8	RUBBER SHEET C	AZA1390
	9	NAME PLATE A (FOR AXD1351 AND AXD1352)	AZA1391
	9	NAME PLATE A (FOR AXD1353)	AZA1404
	10	NAME PLATE B (FOR AXD1351)	AZA1491
	10	NAME PLATE B (FOR AXD1352)	AZA1494
	10	NAME PLATE B (FOR AXD1353)	AZA1496
	11	KNOB A	AZA1393
	12	KNOB B	AZA1394
	13	KEY TOP	AZA1395
	14	SPACER	AZA1396
	15	SPRING	AZB1268
	16	TAPPING SCREW	AZB1368
	17	TAPPING SCREW	AZB1365
	18	SPRING(+)	AZB1366
	19	SPRING(-)	AZB1367
NSP	20	P.W.B	AZN2188
	21	CUSHION	AZE1090



Note
*** 1 : AXD1351 only**

13.2 PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10^1 → 561 .... RD1/8PM$\boxed{5}\boxed{6}\boxed{1}$J
47k Ω → 47 × 10^3 → 473 .... RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω → 0R5 .... RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1 Ω → 010 .... RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 .... RN1/4PC$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC1	IC	AZC1838
	Q1, Q2	TRANSISTOR	2SD1664
	Q3	VOLTAGE DETECTOR	AZC1582
	Q4	CHIP TRANSISTOR	2SC3265
	D1	LED	SE303A-C
	D2	DIODE	SPS-503C-3
	D3	LED	AZC1224
	D4-D6	CHIP DIODE	RLS73
	D7-D15	LED	AZC1583
SWITCHES			
	SW1	SLIDE SWITCH	AZS1073
	SW2	SLIDE SWITCH	AZS1074
	SW3	DETECTOR SW	AZS1123
	SW4	PUSH SWITCH	AZS1122
CAPACITORS			
	C1, C3	ELECTR. CAPACITOR	CEAS101M10
	C2	ELECTR. CAPACITOR	CEAS470M10
	C4-C7	CERAMIC CAPACITOR	CKCYX104M25
	C8	CHIP CAPACITOR	CCSQCH101J50
RESISTORS			
	R1	CARBONFILM RESISTOR	RD1/4PM020J
	R2, R3	CARBONFILM RESISTER	RD1/8PM221J
	R4	CARBONFILM RESISTER	RD1/8PM104J
	R5, R13	CARBONFILM RESISTER	RD1/8PM333J
	R6, R8	CARBONFILM RESISTOR	RD1/8PM472J
	R7	CARBONFILM RESISTER	RD1/8PM822J
	R9	CARBONFILM RESISTER	RD1/8PM913J
	R10	CARBONFILM RESISTER	RD1/8PM823J
	R11, R12	CARBONFILM RESISTER	RD1/8PM561J
	R14-R22	CARBONFILM RESISTER	RD1/8PM271J
OTHERS			
	Z1	CERAMIC OSCILLATOR (4.0MHz)	FCR4.0MC3

13.3 SCHEMATIC AND PCB DIAGRAMS

(Type 2A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**

2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**

3. **RESISTORS:**
Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance:(F):±1%, (G):±2%, (K):±10%, (M):±20% or ±5% unless otherwise noted.

4. **CAPACITORS:**
Unit : p:pF or μF unless otherwise noted.
Ratings : capacitor (μF) / voltage (V) unless otherwise noted.
Rated voltage : 50V except for electrolytic capacitors.

5. **COILS:**
Unit : m:mH or μH unless otherwise noted.

6. **VOLTAGE AND CURRENT:**
▭ or ←V :
DC voltage (V) at no input signal unless otherwise noted.
⇐mA or ←mA :
DC current at no input siganl unless otherwise noted.

7. **OTHERS:**
- ⊘ or ⊘ : Adjusting point.
- ◁ : Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

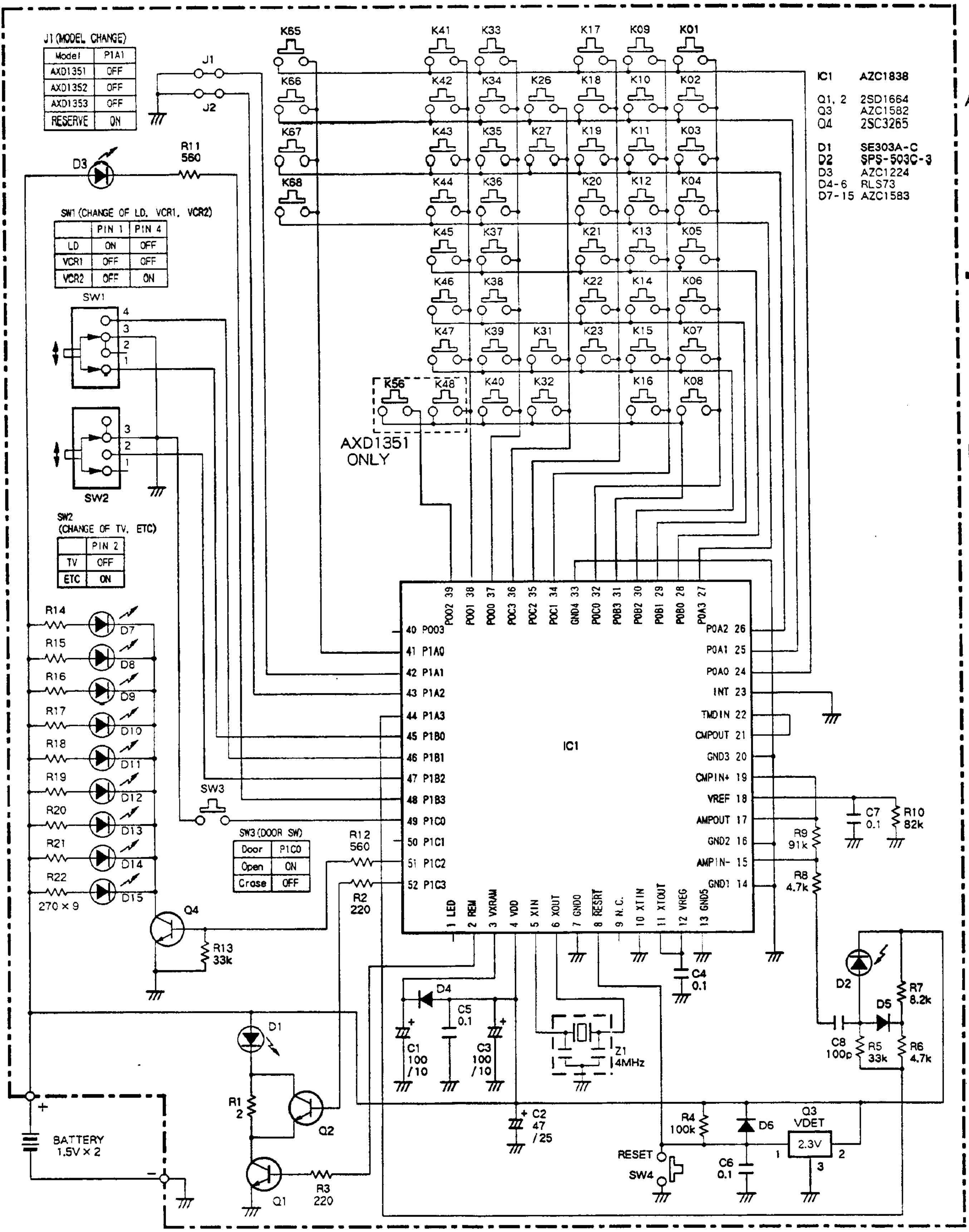
8. **SCH – ☐ ON THE SCHEMATIC DIAGRAM:**
- SCH–☐ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. **SWITCHES** (Underline indicates switch position):
SW1 : LD – VCR1 – VCR2
SW2 : TV – ETC
SW3 : DOOR
SW4 : RESET
K17 : POWER (TV POWER)
K18 : TV
K19 : VIDEO 1
K20 : VIDEO 2
K21 : MUTE
K22 : LD
K23 : VIDEO 3
K26 : –
K27 : +] CH
K31 : +
K32 : –] VOL
K65 : LEARN
K66 : EDIT
At the SW3 OFF position (Door closed)
K02 : POWER (LD/VCR POWER)
K06 : ⏮ ((–)
K08 : ⏭ (+)] VCR CH)
K09 : ◀◀ ((◀◀))
K10 : REC (1/2)
K11 : ▶▶ ((▶▶))
K12 : REC (2/2)
K13 : ▶ (1/2)
K14 : ⏸ / ▶◀
K15 : ▶ (1/2)
K16 : ■ / ⏏
At the SW3 ON position (Door opened)
K01 : 1
K02 : 4
K03 : 2
K04 : 5
K05 : 3
K06 : 6
K07 : SLEEP
K08 : DISPLAY
K09 : 7
K10 : 0
K11 : 8
K12 : CH SCAN
K13 : 9
K14 : CH RETURN
K15 : MTS
K16 : STD / AV MEM
K33 : P IN P
K34 : SWAP
K35 : INPUT
K36 : SHIFT
K37 : STILL
K38 : ▲ (ADJUST)
K39 : CINEMA WIDE
K40 : MENU
K41 : MULTI
K42 : STROBE
K43 : ◀ (ADJUST)
K44 : CC MODE
K45 : SET
K46 : ▼ (ADJUST)
K47 : ▶ (ADJUST)
K48 : DOLBY MODE (AXD1351 only)
K56 : STADIUM / SS (AXD1351 only)
K67 : M. CLR
K68 : LIGHTING

SD-P5075-K, SD-P5073-K, SD-P4575-K, SD-P4573-K, SD-P5575-K, PRO-97

REMOTE CONTROL UNIT(AXD1351, AXD1352 AND AXD1353)

SCH-20



J1 (MODEL CHANGE)

Model	P1A1
AXD1351	OFF
AXD1352	OFF
AXD1353	OFF
RESERVE	ON

SW1 (CHANGE OF LD, VCR1, VCR2)

	PIN 1	PIN 4
LD	ON	OFF
VCR1	OFF	OFF
VCR2	OFF	ON

SW2 (CHANGE OF TV, ETC)

	PIN 2
TV	OFF
ETC	ON

SW3 (DOOR SW)

Door	P1C0
Open	ON
Crose	OFF

IC1	AZC1838
Q1, 2	2SD1664
Q3	AZC1582
Q4	2SC3265
D1	SE303A-C
D2	SPS-503C-3
D3	AZC1224
D4-6	RLS73
D7-15	AZC1583

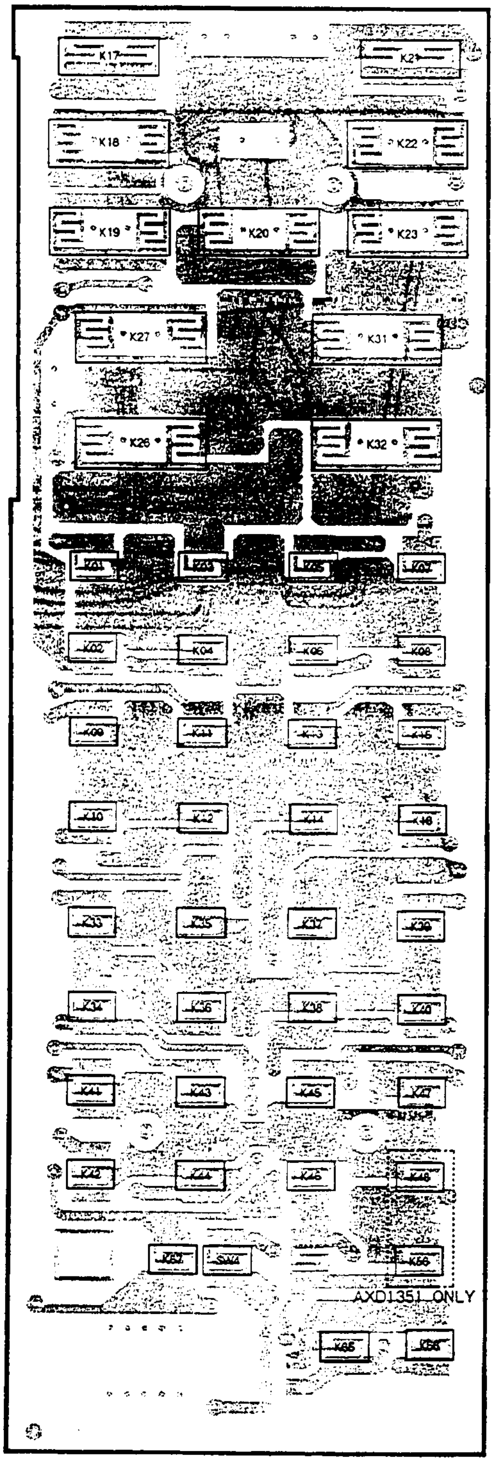
A
B
C
D
K65
K66
K67
K68
K41
K33
K17
K09
K01
K42
K34
K26
K18
K10
K02
K43
K35
K27
K19
K11
K03
K44
K36
K20
K12
K04
K45
K37
K21
K13
K05
K46
K38
K22
K14
K06
K47
K39
K31
K23
K15
K07
K56
K48
K40
K32
K16
K08
AXD1351 ONLY
J1
J2
D3
R11 560
SW1
4
3
2
1
SW2
3
2
1
R14
R15
R16
R17
R18
R19
R20
R21
R22
270 × 9
D7
D8
D9
D10
D11
D12
D13
D14
D15
SW3
R12 560
R2 220
Q4
R13 33k
IC1
39 P0O2
38 P0O1
37 P0O0
36 P0C3
35 P0C2
34 P0C1
33 GND4
32 P0C0
31 P0B3
30 P0B2
29 P0B1
28 P0B0
27 P0A3
40 P0O3
41 P1A0
42 P1A1
43 P1A2
44 P1A3
45 P1B0
46 P1B1
47 P1B2
48 P1B3
49 P1C0
50 P1C1
51 P1C2
52 P1C3
P0A2 26
P0A1 25
P0A0 24
INT 23
TMDIN 22
CMPOUT 21
GND3 20
CMPIN+ 19
VREF 18
AMPOUT 17
GND2 16
AMPIN- 15
GND1 14
1 LED
2 REM
3 VXRAM
4 VDD
5 XIN
6 XOUT
7 GND0
8 RESET
9 N.C.
10 XTIN
11 XTOUT
12 VREG
13 GND5
C7 0.1
R10 82k
R9 91k
R8 4.7k
C4 0.1
D2
R7 8.2k
D5
C8 100p
R5 33k
R6 4.7k
D4
C5 0.1
C1 100 /10
C3 100 /10
Z1 4MHz
D1
R1 2
Q2
C2 47 /25
R4 100k
D6
Q3 VDET
2.3V
1
2
3
RESET
SW4
C6 0.1
BATTERY 1.5V × 2
+
-
Q1
R3 220
A
B
C
D

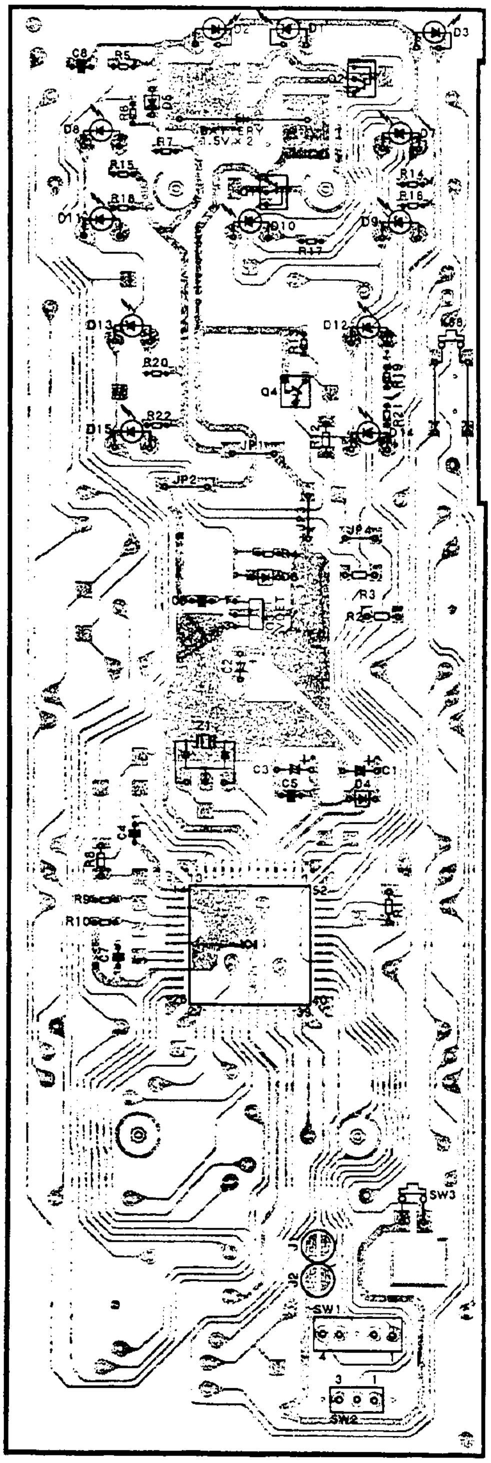
SCH-20

REMOTE CONTROL UNIT

PCB-10

A


K17
K21
K18
K22
K19
K20
K23
K27
K31
K26
K32
K01
K03
K05
K07
K02
K04
K06
K08
K09
K11
K13
K15
K10
K12
K14
K16
K33
K35
K37
K39
K34
K36
K38
K40
K41
K43
K45
K47
K42
K44
K46
K48
K57
SW4
K58
AXD1351 ONLY
K65
K66


D2
D1
D3
C8
R5
Q2
R6
D5
BATTERY
1.5V × 2
D8
D7
R7
R15
R14
R18
R16
D11
D10
D9
R17
D13
D12
R20
Q4
D15
R22
JP1
JP2
JP4
R3
R2
Z1
C3
C5
C1
D4
C4
R8
R10
SW3
SW1
SW2
4
3
1

B

C

D

14. WIRING DIAGRAM

Reconnect any disconnected lead wires of the Projection monitor receiver.

Figs. 14-1 and 14-2 show the important points for connection of the lead wires. You may find that they were connected differently. Be sure reconnect the lead wires as they were.

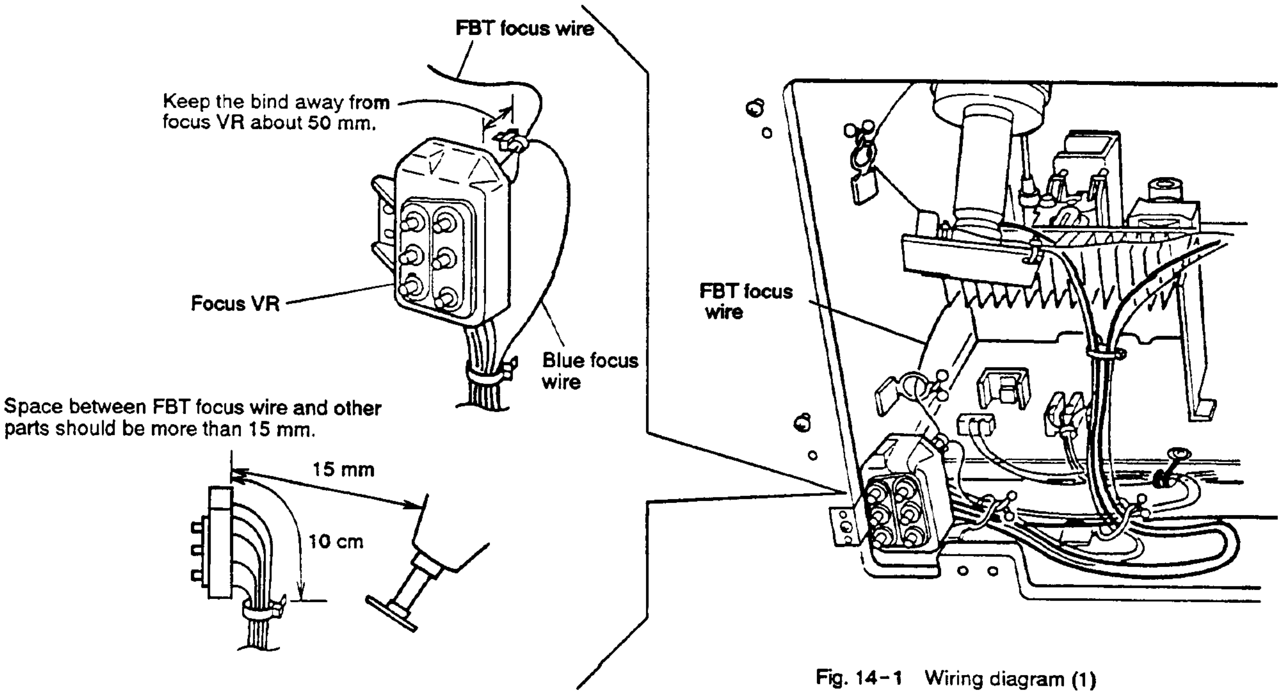

FBT focus wire
Keep the bind away from focus VR about 50 mm.
Focus VR
Blue focus wire
Space between FBT focus wire and other parts should be more than 15 mm.
15 mm
10 cm
FBT focus wire

Fig. 14-1 Wiring diagram (1)

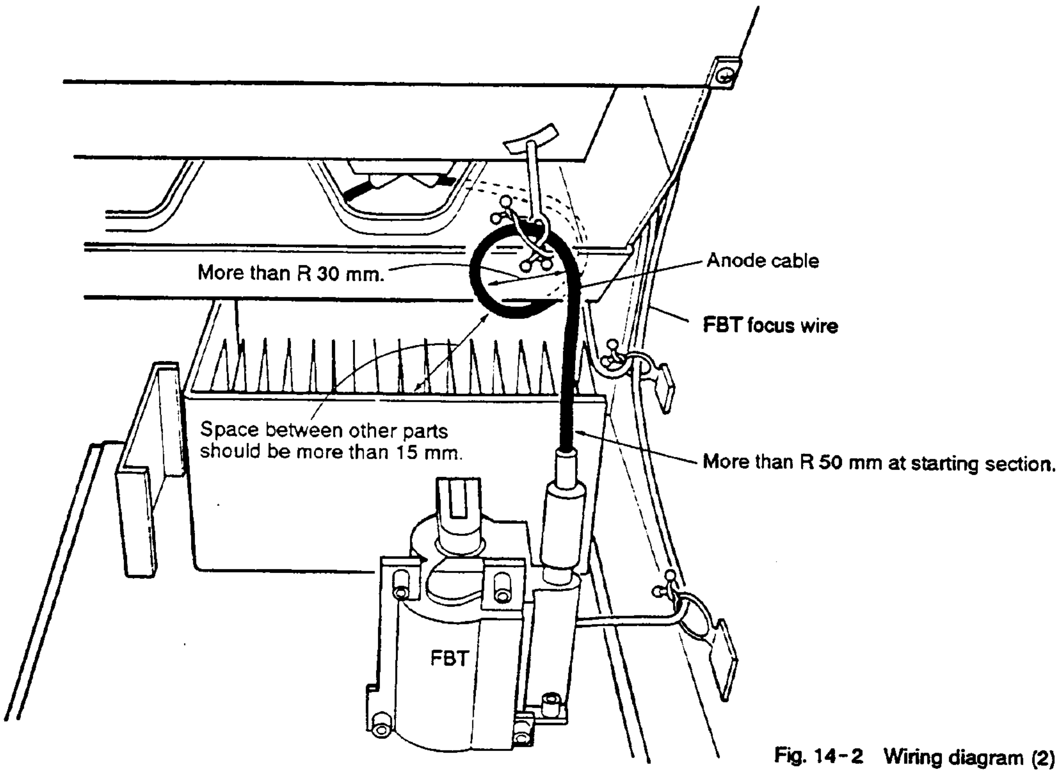
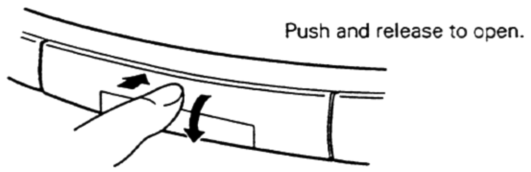

More than R 30 mm.
Anode cable
FBT focus wire
Space between other parts should be more than 15 mm.
More than R 50 mm at starting section.
FBT

Fig. 14-2 Wiring diagram (2)

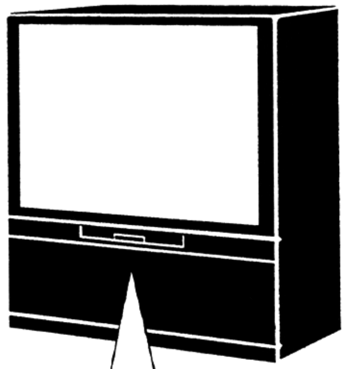
15. PANEL FACILITIES

• SD-P5075-K, SD-P5073-K, SD-P4575-K, SD-P4573-K AND SD-P5575-K

A flip-down door conceals the control panel. Push gently and release, to open the door.
To close the door, lift it back up into place.



NOTE:
If you accidentally pull the door, it may not shut properly. Push in when shutting the door to restore it to normal operation.



Control Panel
Use the remote control unit to operate most functions.

① **POWER switch and indicator**
Press once to turn on the power. Press again to turn the power off. The POWER indicator lights up when the power is on.

② **CHANNEL buttons**
Press plus (+) or minus (–) to tune to a higher or lower channel. Only those channels in channel preset can be tuned in by this method.

③ **VOLUME buttons**
Press the plus (+) or minus (–) button to raise or lower the volume.
The level at the SYSTEM AUDIO OUT (SD-P5575/SD-P5075/SD-P4575) or AUDIO OUTPUT VARIABLE (SD-P5073/SD-P4573) jacks can be adjusted with these buttons.

④ **STD/AV MEM (Standard/AV Memory/SOFT BRIGHTNESS POSITION) button**
Press to switch between the standard (STD) picture/sound settings, AV MEMORY 1 and AV MEMORY 2 settings (settings in which you have stored your own picture and sound quality), and SOFT BRIGHTNESS POSITION settings.
This button recalls settings stored in AV MEMORY and SOFT BRIGHTNESS POSITION. To put the current picture/sound settings into AV MEMORY.

⑤ **INPUT jacks (VIDEO-3)**
These front panel jacks are convenient for connecting a portable VCR, a video camera recorder or other temporary video source to the monitor. When the audio signal of the source to be connected is monaural, connect the L (MONO) jack.
Use the S-VIDEO jack when connecting an S-VHS or ED Beta VCR, or an LD player which has an S-output jack.

⑥ **RETURN button**
Press to set the Projection Monitor to its initial mode instantly if either sound or picture disappear from the speaker system or the screen during adjustment.
- Adjust the Projection Monitor again after pressing the RETURN button, as all settings have been cleared.

When the RETURN button is pressed, the Projection Monitor is set as follows:
PICTURE: Parameters, set to 0.
SOUND: Parameters, set to 0.
VOLUME: Remains at the last setting.
DPO/P-in-P/VNR/SLEEP/MUTE: Set to OFF.
INPUT SELECTOR:Set to TV.
TV CHANNEL: Remains at the last channel set.
MTS: Remains at the last setting.
CC: CC - OFF (C1, F1, BLACK BACKGROUND)
CINEMA WIDE: Set to the NORMAL CINEMA mode.
CINEMA POSITION: Set to OFF.
TRIMMING: Set to OFF.

[SD-P5575, SD-P5075 and SD-P4575]
DOLBY PRO LOGIC/DOLBY 3 CH LOGIC/STADIUM/SS: Set to OFF.

⑦ **DPO sensor**
This sensor detects ambient lighting for the DPO (Dynamic Picture Optimizer) circuit which optimizes the TV picture accordingly.

⑧ **REMOTE SENSOR**
This sensor picks up infrared signals from the remote control unit.

⑨ **Dolby surround mode button (DD MODE) (except SD-P5073 and SD-P4573)**
Press to select Dolby surround mode as desired according to the video source and speaker system positioning.

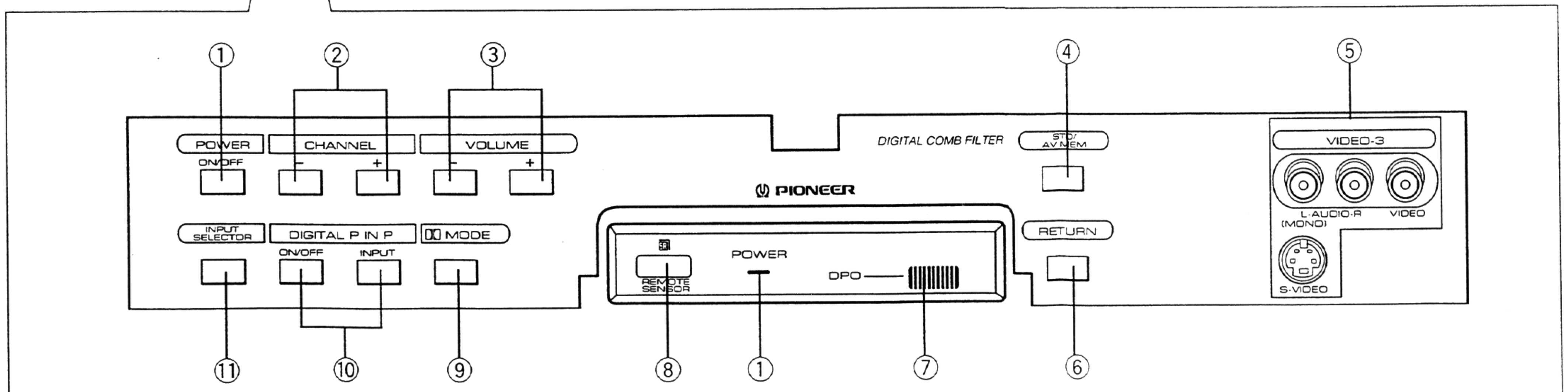
⑩ **DIGITAL P IN P (Picture-in-Picture) buttons**
ON/OFF: Press to turn the Picture-in-Picture function on and off.
INPUT: Press to select the input source for the subpicture while in 1-subpicture mode.
- For details on the Picture-in-Picture function, see page 32.

NOTES:
- *If only the* S-VIDEO *LD and VIDEO jacks of the LD player and/or VCR are connected to the Projection Monitor, the Picture-in-Picture function will not operate when these buttons are pressed.*
- *When the P IN P ON/OFF button is pressed and held for more than 2 seconds, the Projection Monitor will go into its demonstration mode (see front cover).*

⑪ **INPUT SELECTOR button**
Press to select your program source: TV, LD player, VIDEO 1, VIDEO 2 or VIDEO 3. Each press of the button changes the selection to the next source.

NOTE:
On rare occasions, an electrical discharge may occur inside the CRT. It makes a short, sharp pop and either no sound is produced or the volume level changes by itself. The Picture-in-Picture function will be cancelled automatically if an electrical discharge occurs when this function is engaged. However, DPO and VNR resume automatically when an electrical discharge occurs. (SD-P5575/SD-P5075/SD-P4575: DOLBY SURROUND, STADIUM/SS, DPO and VNR resume automatically when an electrical discharge occurs.)

Caution:
Do not press any operation button on the Projection Monitor or on the remote control unit while recording is in progress. Signals from the REC jacks may be temporarily interrupted when an operation button is pressed.

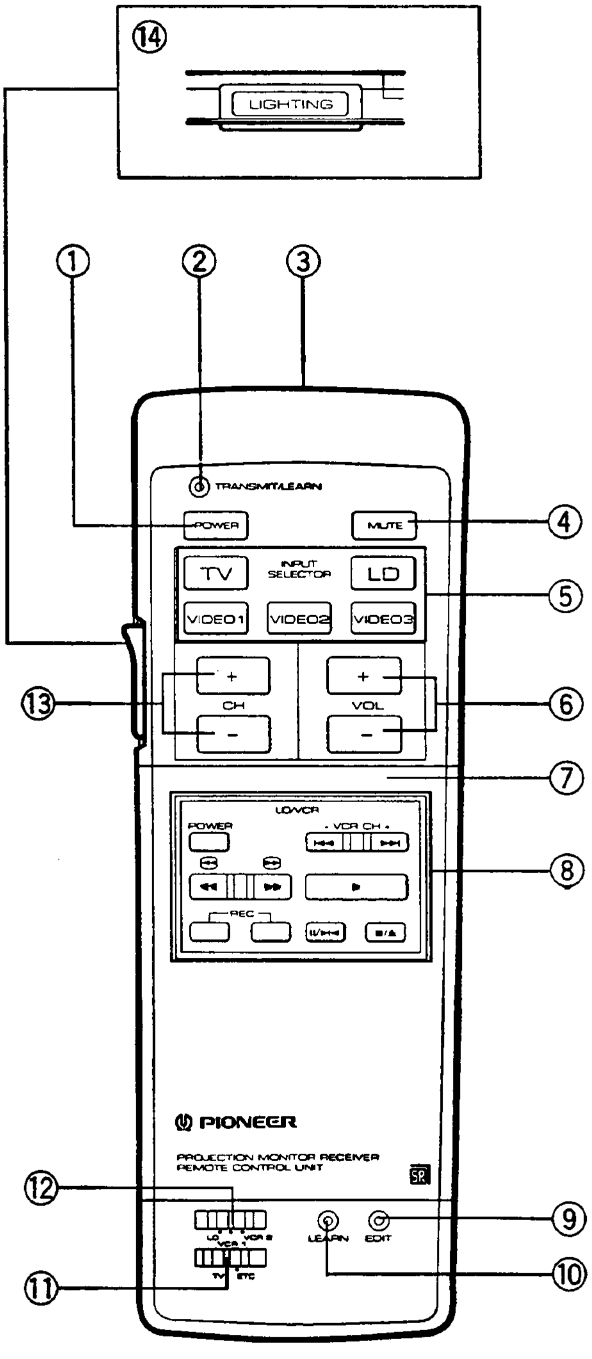


Models SD-P5073 and SD-P4573 are not equipped with ⑨.

ATTENTION
The Projection Monitor Receiver will not function properly in the following cases:
- Lightning storms.
- High static electricity environment.
- Poor voltage regulation in the power source.

If the Projection Monitor does not operate properly, reset it as follows:
1. Unplug from the power supply for approximately 1 minute.
2. Plug the power cord in again to reset it.

• REMOTE CONTROL UNIT


⑭
LIGHTING
①
②
③
TRANSMIT/LEARN
POWER
MUTE
④
TV
INPUT SELECTOR
LD
⑤
VIDEO1
VIDEO2
VIDEO3
⑬
CH
VOL
⑥
⑦
LD/VCR
POWER
• VCR CH •
REC
⑧
PIONEER
PROJECTION MONITOR RECEIVER
REMOTE CONTROL UNIT
⑫
LD
VCR 1
VCR 2
LEARN
EDIT
⑨
TV
ETC
⑪
⑩

Caution:
Do not press any operation button on the Projection Monitor or on the remote control unit while recording is in progress. Signals from the REC jacks may be temporarily interrupted when an operation button is pressed.

① POWER button
Turns the power of the monitor on and off.

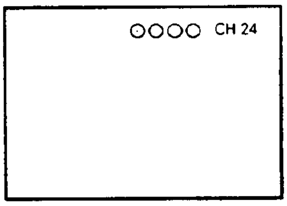
② TRANSMIT/LEARN indicator
Flashes when commands are being sent when one of the remote control buttons is pressed.

③ Transmitting and Remote Control Code Receiver Window
Transmits remote control signals using infrared rays.
When memorizing a remote control code, the window will function as an infrared receiver.

④ MUTE button
Press to temporarily turn off the sound. Press again to return to the previous volume level. This is useful, for example, when answering the telephone.
The volume display will turn red while the mute function is engaged and will disappear from the screen when the mute function is cancelled. If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0.

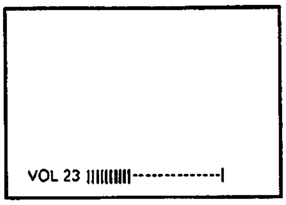
⑤ INPUT SELECTOR buttons (TV/LD/VIDEO 1/VIDEO 2/ VIDEO 3)
Press the button to select the source you wish to watch. The screen will display your selection.

Display example
When TV is selected:
Channel display. (If the station label has been entered, it is displayed on the section of "OOOO".)



⑥ VOL (Volume) +, – buttons
Press the + button to increase the volume, and the – button to decrease it. Volume adjustment will appear on the screen as numbers and a bar graph. '63' indicates the maximum volume level.
The display will disappear from the screen after 2 seconds.
* Volume display will change color automatically according to the selected input mode.

Display colors
TV: Green
LD: Cyan (Greenish Blue)
VIDEO 1: Purple
VIDEO 2: Blue
VIDEO 3: Yellow



The level at the SYSTEM AUDIO OUT (SD-P5575/SD-P5075/SD-P4575) or AUDIO OUTPUT VARIABLE (SD-P5073/SD-P4573) jacks can be adjusted with these buttons.

⑦ Top Panel

Operation buttons contained inside the top panel are for more attractive feature operations.

- After all operations are completed, make sure that the top panel is securely closed.

⑧ LD/VCR Control buttons

If your LD Player or VCR (Video Cassette Recorder) is a PIONEER model bearing the SR mark, you can control the component using these buttons.

- When using these control buttons, the Transmit Mode switch is set to LD, VCR 1 or VCR 2.

⑨ EDIT button

Press to set the preset code edit mode by setting Transmit Mode switch to LD, VCR 1 or VCR 2.

⑩ LEARN button

This setting activates the capability of the unit to "learn" and store command codes from other remote control units.

⑪ TV/ETC switch

Set to the position that corresponds to the component you wish to control, choose between the Projection Monitor and other LD player or video cassette recorder, using commands programmed in the remote control unit.

TV: To send remote control code commands to Pioneer SR marked models.

ETC: To send programmed commands.

⑫ Transmit Mode switch

Set to the position that corresponds to the component you wish to operate.

LD: To control the LD Player.

VCR 1: To send commands to VCR 1.

VCR 2: No commands are preset.

- If you wish to use LD/VCR control buttons for VCR 2 remote control, store command codes from other remote control units in the LD/VCR control buttons.

⑬ CH (Channel) +, – buttons

Press plus (+) or minus (–) to tune to a higher or lower channel. Only those channels in channel preset can be tuned in by this method.

⑭ LIGHTING button

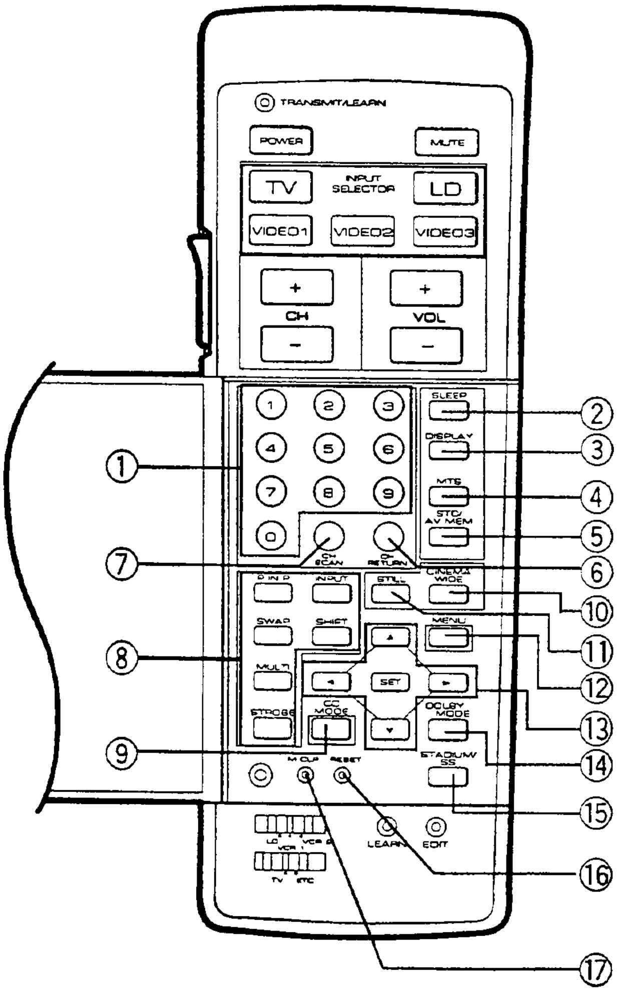
Press the LIGHTING button and the INPUT SELECTOR (TV/LD/VIDEO 1/VIDEO 2/VIDEO 3), VOL (+/–) and CH (+/–) buttons light up.

The lights go off automatically several seconds after the button is pressed.

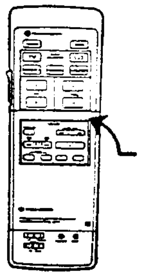
- If the light becomes dimmer or operating distance of the remote control becomes shorter, the dry cell batteries may need to be replaced.
- If you press the LIGHTING button repeatedly, the life of the batteries will be reduced.

Inside the top panel

Models SD-P5073 and SD-P4573 are not equipped with ⑭ and ⑮.


TRANSMIT/LEARN
POWER
MUTE
TV
INPUT SELECTOR
LD
VIDEO1
VIDEO2
VIDEO3
CH
VOL
SLEEP
DISPLAY
MTS
STD/ AV MEM
CH SCAN
CH RETURN
P IN P
INPUT
STILL
CINEMA WIDE
SWAP
SHIFT
MENU
MULTI
SET
STROBE
CC MODE
DOLBY MODE
STADIUM SS
M CLR
RESET
LEARN
EDIT
LD
VCR 2
VCR 1
TV
ETC
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰

Caution:
Open the top panel while pressing on the top right-hand corner of the top panel.
If the top panel is removed, reattach it.



① **Direct Channel Selection buttons**
Press the button (or buttons) that correspond to the channel that you wish to watch, to switch directly to that channel from any other channel.

② **SLEEP button**
Press to set the sleep timer.
The switching sequence is 90, 60, 30 (in minutes) and OFF (cancel). The screen will confirm your setting and the Projection Monitor will shut down when that amount of time has elapsed.
The POWER OFF display will appear on the screen approximately 1 minute before power turns off. The POWER OFF display will flash red until the power is turned off.

→ SLEEP OFF → SLEEP 90 → SLEEP 60
SLEEP 30 ←

Each time the SLEEP button is pressed, the sleep time decreases in intervals of 30 minutes (OFF → 90 → 60 → 30).
When the SLEEP button is held down, the sleep time decreases in one minute intervals. For example, to set sleep time to 40 minutes: Press the SLEEP button twice ('90' is displayed). Press the SLEEP button again and hold it ('60' is displayed briefly, then the display decreases in 1 minute intervals: 59, 58, 57, ..., etc.). Release the SLEEP button when the display reads '40'.

NOTE:
To cancel the sleep time which has been set, turn the POWER OFF.

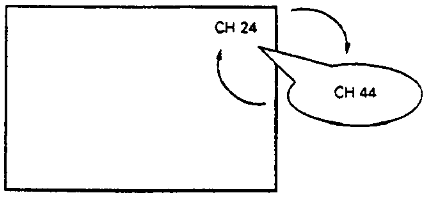
③ **DISPLAY button**
Press once to display the current channel and/or other information on the screen.

④ **MTS (Multichannel TV Sound) button**
Press to select the reception mode for multichannel TV.

→ MAIN → SAP → MAIN/SAP → MONO

⑤ **STD/AV MEM (Standard/AV Memory/SOFT BRIGHTNESS POSITION) button**
Press to switch between the standard (STD) picture/sound quality settings, AV MEMORY 1 and AV MEMORY 2 settings and SOFT BRIGHTNESS POSITION settings.
This button recalls settings stored in AV MEMORY and SOFT BRIGHTNESS POSITION. To put the current picture/sound settings into AV MEMORY.

⑥ **CH RETURN (Channel return) button**
Press to switch between the current channel and the channel you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.



⑦ CH SCAN (Channel scan) button

Press to display 4 (or 9) memorized TV stations on the split screen at the same time. After pressing the CH SCAN button, use the MULTI button to select 4-station display mode or 9-station display mode.

Channel Scan Features

When 4-subpicture or 9-subpicture mode is selected, use this feature to select one of the television stations currently displayed for full-screen viewing.

Press the direct channel selection buttons that correspond to the channel that you wish to watch.

NOTE:

In cases where the transmission from the broadcasting station has stopped or you have selected a channel without a broadcasting station, either a noise screen or the transmission of the last station received will appear on the screen, when the channel scan feature is engaged.

⑧ Picture-in-Picture Control buttons

Any program source connected to the Projection Monitor can be displayed on the screen simultaneously with any other source. Also, the multipicture mode (4-subpicture or 9-subpicture) can be selected.

P IN P: Press to turn the Picture-in-Picture function on and off.

INPUT: Press to select the input source for the subpicture while in 1-subpicture mode.

MULTI: Press to select the number of subpictures which appear on the screen (1, 4 or 9).

SWAP: When only one subpicture is displayed, press to exchange the position of the main picture and subpicture.

SHIFT: Press to move the subpicture to a different place on the screen.

STROBE: Press to select the strobe feature. Be sure to select the multiscreen mode (4-subpicture or 9-subpicture) using the MULTI button.

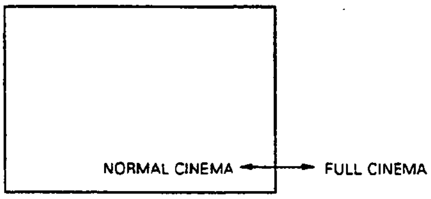
⑨ CC MODE button

Press to select the mode of displaying the character information contained in closed caption broadcasting.

→ CC OFF → CAPTION → TEXT →

⑩ CINEMA WIDE button

Press to select whether the normal picture is to be displayed (NORMAL CINEMA mode) or the letter-box size (U.S. standard wide) picture is to be displayed to fill the screen (FULL CINEMA).



⑪ STILL button

Press to select still screen or normal mode.

If the button is pressed during Picture-in-Picture operation, the subpicture disappears.

⑫ MENU button

Press to turn on the menu screen for use in function selection. Press again to return to normal operation.

The selected items are displayed in purple, and the items can be selected with the ▲ and ▼ buttons ⑬.

NORMAL CINEMA mode

PICTURE
SOUND
PICTURE SELECT
CLOSED-CAPTION
PRESET
DEMONSTRATION

FULL CINEMA mode

PICTURE
SOUND
PICTURE SELECT
CLOSED-CAPTION
CONVERGE
DEMONSTRATION

⑬ Select/Adjust/Set buttons (SET, ▲, ▼, ◄, ►)

▲, ▼, ◄, ►: Press to select, adjust or set items on the menu screen.

SET: Press to activate the selected function.

⑭ DOLBY MODE button (except SD-P5073 and SD-P4573)

Press once to display the current channel and/or other information on the screen for approx. 2 seconds.

The selected mode will be set to OFF when STADIUM or S.STEREO is selected and the STADIUM/SS button is pressed.

→ OFF → DOLBY PRO LOGIC → DOLBY 3 CH LOGIC →

⑮ STADIUM/SS button (except SD-P5073 and SD-P4573)

Press once to display the current channel and/or other information on the screen for approx. 2 seconds.

The selected mode will be set to OFF when DOLBY PRO LOGIC or DOLBY 3 CH LOGIC is selected and the DOLBY MODE button is pressed.

→ OFF → STADIUM → S.STEREO →

⑯ RESET button

Press to reset the microcomputer in the remote control unit to its initial mode in the following cases:

- When the batteries are replaced.
- If the remote control unit will not function properly when an operation button is pressed, etc.

NOTE:

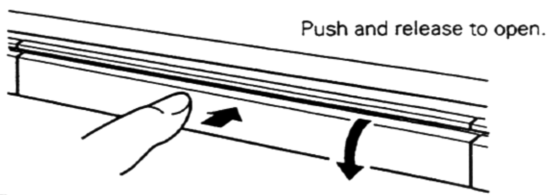
On rare occasions, an electrical discharge may occur inside the unit, causing some command malfunction. If this happens, pressing RESET should correct the problem. The possibility exists, however, that instead of correcting the problem, pressing RESET may erase the programmed memory.

⑰ M. CLR button

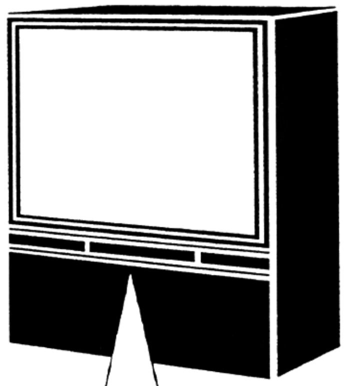
Erases all commands programmed through the LEARN function; press lightly with the tip of a ballpoint pen or other fine-tipped instrument during learn mode to activate this function.

• PRO-97 (including PRO-107 and PRO-77)

A flip-down door conceals the control panel. Push gently and release, to open the door.
To close the door, lift it back up into place.



NOTE:
If you accidentally pull the door, it may not shut properly. Push in when shutting the door to restore it to normal operation.



Control Panel
Use the remote control unit to operate most functions.

① **POWER switch and indicator**
Press once to turn on the power. Press again to turn the power off. The POWER indicator lights up when the power is on.

② **ANTENNA button**
Press to switch between the ANTENNA-1 and ANTENNA-2 broadcast signals. This is convenient, for instance, when switching between regular broadcast TV and cable TV.

③ **INPUT SELECTOR button**
Press to select your program source: TV, LD player, VIDEO 1, VIDEO 2 or VIDEO 3. Each press of the button changes the selection to the next source.

④ **CHANNEL buttons**
Press plus (+) or minus (–) to tune to a higher or lower channel. Only those channels in channel preset can be tuned in by this method.

⑤ **VOLUME buttons**
Press the plus (+) or minus (–) button to raise or lower the volume.
The level at the AUDIO OUTPUT VARIABLE jacks can be adjusted with these buttons.

⑥ **STD/AV MEM (Standard/AV Memory/SOFT BRIGHTNESS POSITION) button**
Press to switch between the standard (STD) picture/sound settings, AV MEMORY 1 and AV MEMORY 2 settings (settings in which you have stored your own picture and sound quality), and SOFT BRIGHTNESS POSITION settings.
This button recalls settings stored in AV MEMORY and SOFT BRIGHTNESS POSITION. To put the current picture/sound settings into AV MEMORY.

⑦ **RETURN button**
Press to set the Projection Monitor to its initial mode instantly if either sound or picture disappear from the speaker system or the screen during adjustment.
- Adjust the Projection Monitor again after pressing the RETURN button, as all settings have been cleared.

When the RETURN button is pressed, the Projection Monitor is set as follows:
PICTURE: Parameters, set to 0.
SOUND: Parameters, set to 0.
VOLUME: Remains at the last setting.
DPO/P-in-P/VNR/SLEEP/MUTE: Set to OFF.
INPUT SELECTOR: Set to TV.
TV CHANNEL: Remains at the last channel set.
MTS: Remains at the last setting.
CC: CC - OFF (C1, F1, BLACK BACKGROUND)
CINEMA WIDE: Set to the NORMAL CINEMA mode.
CINEMA POSITION: Set to OFF.
TRIMMING: Set to OFF.

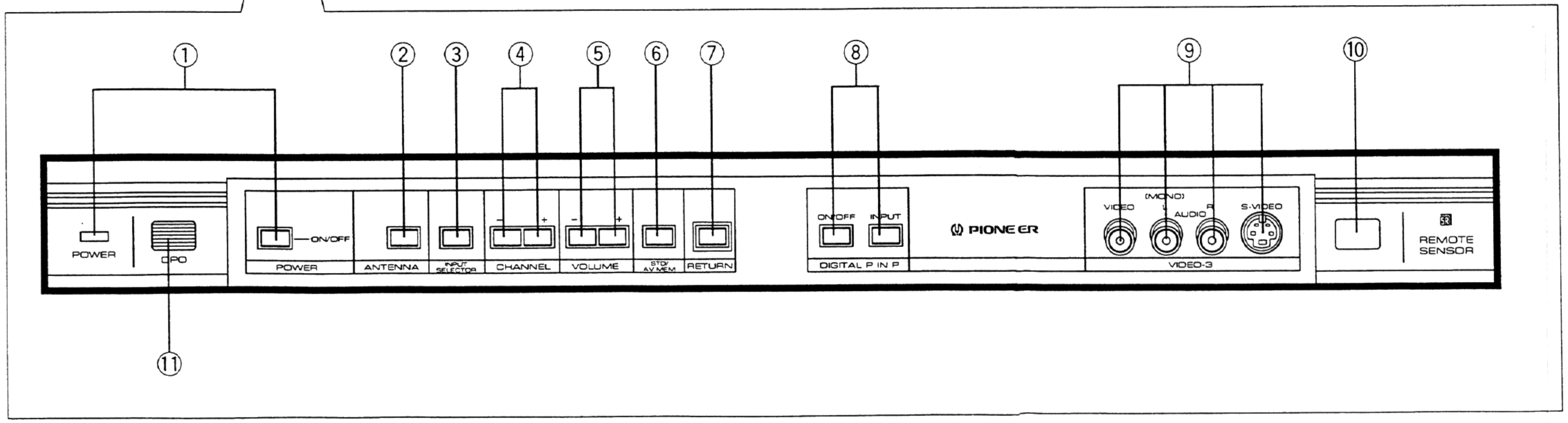
⑧ **DIGITAL P IN P (Picture-in-Picture) buttons**
ON/OFF: Press to turn the Picture-in-Picture function on and off.
INPUT: Press to select the input source for the subpicture while in 1-subpicture mode.
- For details on the Picture-in-Picture function.

NOTES:
- *If only the S-VIDEO LD and VIDEO jacks of the LD player and/or VCR are connected to the Projection Monitor, the Picture-in-Picture function will not operate when these buttons are pressed.*
- *When the P IN P ON/OFF button is pressed and held for more than 2 seconds, the Projection Monitor will go into its demonstration mode (see front cover).*

⑨ **INPUT jacks (VIDEO-3)**
These front panel jacks are convenient for connecting a portable VCR, a video camera recorder or other temporary video source to the monitor. When the audio signal of the source to be connected is monaural, connect the L (MONO) jack.
Use the S-VIDEO jack when connecting an S-VHS or ED Beta VCR, or an LD player which has an S-output jack.

⑩ **REMOTE SENSOR**
This sensor picks up infrared signals from the remote control unit.

⑪ **DPO sensor**
This sensor detects ambient lighting for the DPO (Dynamic Picture Optimizer) circuit which optimizes the TV picture accordingly.



NOTE:
On rare occasions, an electrical discharge may occur inside the CRT. It makes a short, sharp pop and either no sound is produced or the volume level changes by itself. The Picture-in-Picture function will be cancelled automatically if an electrical discharge occurs when this function is engaged. However, DPO and VNR resume automatically when an electrical discharge occurs.

Caution:
Do not press any operation button on the Projection Monitor or on the remote control unit while recording is in progress. Signals from the REC jacks may be temporarily interrupted when an operation button is pressed.

ATTENTION
The Projection Monitor Receiver will not function properly in the following cases:
- Lightning storms.
- High static electricity environment.
- Poor voltage regulation in the power source.

If the Projection Monitor does not operate properly, reset it as follows:
1. Unplug from the power supply for approximately 1 minute.
2. Plug the power cord in again to reset it.

• REMOTE CONTROL UNIT

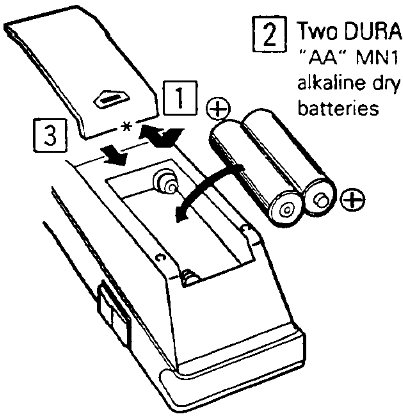
INSERTING BATTERIES

You will find the remote control unit and batteries fixed on the rear panel of the Projection Monitor. Open the remote control unit and insert the batteries. Follow the procedure below:

[1] Open the battery compartment on the rear of the remote control unit. Press down at the * mark with your thumb as shown in the illustration and pull the compartment cover open.

[2] Note the polarity (+ and –) markings in the case. **Insert** the supplied batteries so that they match the markings.

[3] Close the lid by sliding it back in until it clicks into place. Then press the RESET button located on the inside of the top panel with the tip of a ballpoint pen. **The** remote control unit is now ready to use.



[2] Two DURACELL®
"AA" MN1500 1.5V
alkaline dry cell
batteries

Battery Replacement

- If the TRANSMIT/LEARN indicator does not light normally, the batteries are low and should be replaced as soon as possible. Be sure to press the RESET button after the batteries are replaced and the battery compartment cover is closed. (Even when the RESET button is pressed, the programmed signals will not be erased.)
- Replace both batteries with new ones at the same time, and press the RESET button.

NOTE:

Insert the batteries within approx. 15 minutes. The programmed commands will be erased from the memory of the remote control unit after approx. 15 minutes if the batteries are not inserted.

Incorrect use of batteries may lead to leakage or rupture. Always be sure to follow these guidelines:

A.

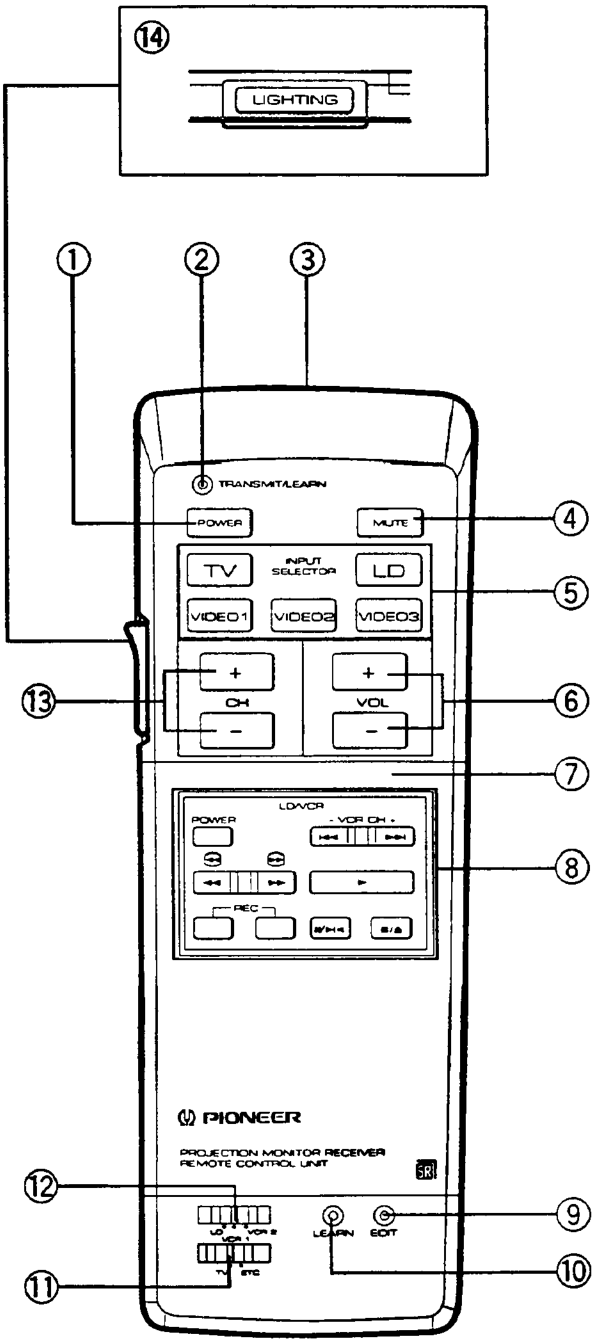
Always insert batteries into the battery compartment correctly matching the positive (+) and negative (–) polarities, as indicated inside the compartment.

B.

Never mix new and used batteries.

C.

Batteries of the same size may have different voltages depending on their type. Do not mix different types of batteries.



Caution:

Do not press any operation button on the Projection Monitor or on the remote control unit while recording is in progress. Signals from the REC jacks may be temporarily interrupted when an operation button is pressed.

① PO
Turns t

② TR
Flashes
remote

③ Tra
Wi
Transm
When
functio

④ MU
Press t
return
examp
The vo
engage
mute f
for ove
automa

⑤ INI
VIE
Press t
The sc

Displ
When
Chan
static
enter
the s

⑥ VC
Press
button
the scr
maxim
The dis
* Volu
to t

Displ
TV: C
LD: C
VIDE
VIDE
VIDE

The le
adjuste

① POWER button

Turns the power of the monitor on and off.

② TRANSMIT/LEARN indicator

Flashes when commands are being sent when one of the remote control buttons is pressed.

③ Transmitting and Remote Control Code Receiver Window

Transmits remote control signals using infrared rays.
When memorizing a remote control code, the window will function as an infrared receiver.

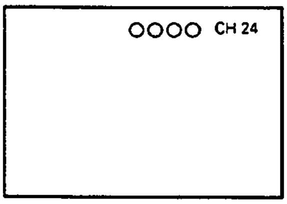
④ MUTE button

Press to temporarily turn off the sound. Press again to return to the previous volume level. This is useful, for example, when answering the telephone.
The volume display will turn red while the mute function is engaged and will disappear from the screen when the mute function is cancelled. If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0.

⑤ INPUT SELECTOR buttons (TV/LD/VIDEO 1/VIDEO 2/ VIDEO 3)

Press the button to select the source you wish to watch. The screen will display your selection.

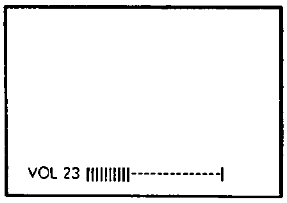
Display example
When TV is selected:
Channel display. (If the station label has been entered, it is displayed on the section of "OOOO".)



⑥ VOL (Volume) +, – buttons

Press the + button to increase the volume, and the – button to decrease it. Volume adjustment will appear on the screen as numbers and a bar graph. '63' indicates the maximum volume level.
The display will disappear from the screen after 2 seconds.
* Volume display will change color automatically according to the selected input mode.

Display colors
TV: Green
LD: Cyan (Greenish Blue)
VIDEO 1: Purple
VIDEO 2: Blue
VIDEO 3: Yellow



The level at the AUDIO OUTPUT VARIABLE jacks can be adjusted with these buttons.

⑦ Top Panel

Operation buttons contained inside the top panel are for more attractive feature operations.

- After all operations are completed, make sure that the top panel is securely closed.

⑧ LD/VCR Control buttons

If your LD Player or VCR (Video Cassette Recorder) is a PIONEER model bearing the SR mark, you can control the component using these buttons.

- When using these control buttons, the Transmit mode switch is set to LD, VCR 1 or VCR 2.

⑨ EDIT button

Press to set the preset code edit mode by setting Transmit mode switch to LD, VCR 1 or VCR 2.

⑩ LEARN button

This setting activates the capability of the unit to "learn" and store command codes from other remote control units

⑪ TV/ETC switch

Set to the position that corresponds to the component you wish to control, choose between the Projection Monitor and other LD player or video cassette recorder, using commands programmed in the remote control unit.
TV: To send remote control code commands to Pioneer SR marked models.
ETC: To send programmed commands.

⑫ Transmit Mode switch

Set to the position that corresponds to the component you wish to operate.
LD: To control the LD Player.
VCR 1: To send commands to VCR 1.
VCR 2: No commands are preset.

- If you wish to use LD/VCR control buttons for VCR 2 remote control, store command codes from other remote control units in the LD/VCR control buttons.

⑬ CH (Channel) +, – buttons

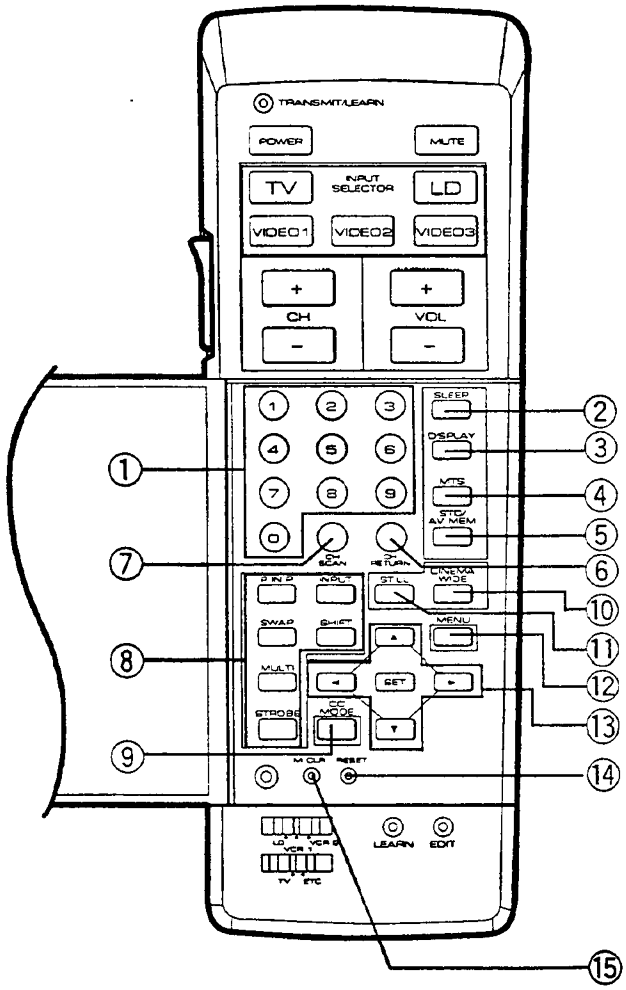
Press plus (+) or minus (–) to tune to a higher or lower channel. Only those channels in channel preset can be tuned in by this method.

⑭ LIGHTING button

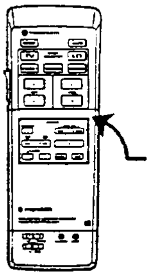
Press the LIGHTING button and the INPUT SELECTOR (TV/LD/VIDEO 1/VIDEO 2/VIDEO 3), VOL (+/–) and CH (+/–) buttons light up.
The lights go off automatically several seconds after the button is pressed.

- If the light becomes dimmer or operating distance of the remote control becomes shorter, the dry cell batteries may need to be replaced.
- If you press the LIGHTING button repeatedly, the life of the batteries will be reduced.

Inside the top panel


TRANSMIT/LEARN
POWER
MUTE
TV
INPUT SELECTOR
LD
VIDEO1
VIDEO2
VIDEO3
+
CH
-
+
VOL
-
1
2
3
4
5
6
7
8
9
0
CH SCAN
CH RETURN
SLEEP
DISPLAY
MTS
STD/ AV MEM
CINEMA WIDE
STILL
MENU
P IN P
INPUT
SWAP
SHIFT
MULTI
STROBE
CC MODE
SET
M CLR
RESET
LD
VCR 1
VCR 2
TV
ETC
LEARN
EDIT
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮

Caution:
Open the top panel while pressing on the top right-hand corner of the top panel.
If the top panel is removed, reattach it.



① Direct Channel Selection buttons

Press the button (or buttons) that correspond to the channel that you wish to watch, to switch directly to that channel from any other channel.

② SLEEP button

Press to set the sleep timer.
The switching sequence is 90, 60, 30 (in minutes) and OFF (cancel). The screen will confirm your setting and the Projection Monitor will shut down when that amount of time has elapsed.
The POWER OFF display will appear on the screen approximately 1 minute before power turns off. The POWER OFF display will flash red until the power is turned off.

→ SLEEP OFF → SLEEP 90 → SLEEP 60 → SLEEP 30 → (back to SLEEP OFF)

Each time the SLEEP button is pressed, the sleep time decreases in intervals of 30 minutes (OFF → 90 → 60 → 30).
When the SLEEP button is held down, the sleep time decreases in one minute intervals. For example, to set sleep time to 40 minutes: Press the SLEEP button twice ('90' is displayed). Press the SLEEP button again and hold it ('60' is displayed briefly, then the display decreases in 1 minute intervals: 59, 58, 57, ..., etc.). Release the SLEEP button when the display reads '40'.

NOTE:
To cancel the sleep time which has been set, turn the POWER OFF.

③ DISPLAY button

Press once to display the current channel and/or other information on the screen.

④ MTS (Multichannel TV Sound) button

Press to select the reception mode for multichannel TV.

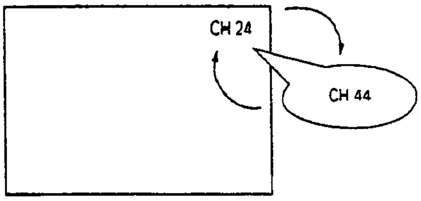
→ MAIN → SAP → MAIN/SAP → MONO → (back to MAIN)

⑤ STD/AV MEM (Standard/AV Memory/SOFT BRIGHTNESS POSITION) button

Press to switch between the standard (STD) picture/sound quality settings, AV MEMORY 1 and AV MEMORY 2 settings and SOFT BRIGHTNESS POSITION settings.
This button only recalls settings stored in AV MEMORY and SOFT BRIGHTNESS POSITION. To put the current picture/sound settings into AV MEMORY,

⑥ CH RETURN (Channel return) button

Press to switch between the current channel and the channel you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.



⑦ CH SCAN (Channel scan) button

Press to display 4 (or 9) memorized TV stations on the split screen at the same time. After pressing the CH SCAN button, use the MULTI button to select 4-station display mode or 9-station display mode.

Channel Scan Features

When 4-subpicture or 9-subpicture mode is selected, use this feature to select one of the television stations currently displayed for full-screen viewing.

Press the direct channel selection buttons that correspond to the channel that you wish to watch.

NOTE:

In cases where the transmission from the broadcasting station has stopped or you have selected a channel without a broadcasting station, either a noise screen or the transmission of the last station received will appear on the screen, when the channel scan feature is engaged.

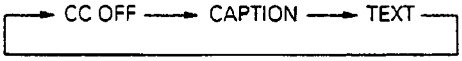
⑧ Picture-in-Picture Control buttons

Any program source connected to the Projection Monitor can be displayed on the screen simultaneously with any other source. Also, the multipicture mode (4-subpicture or 9-subpicture) can be selected.

P IN P:	Press to turn the Picture-in-Picture function on and off.
INPUT:	Press to select the input source for the subpicture while in 1-subpicture mode.
MULTI:	Press to select the number of subpictures which appear on the screen (1, 4 or 9).
SWAP:	When only one subpicture is displayed, press to exchange the position of the main picture and subpicture.
SHIFT:	Press to move the subpicture to a different place on the screen.
STROBE:	Press to select the strobe feature. Be sure to select the multiscreen mode (4-subpicture or 9-subpicture) using the MULTI button.

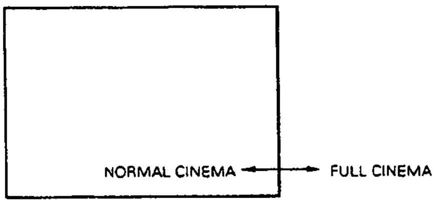
⑨ CC MODE button

Press to select the mode of displaying the character information contained in closed caption broadcasting.



⑩ CINEMA WIDE button

Press to select whether the normal picture is to be displayed (NORMAL CINEMA mode) or the letter-box size (U.S. standard wide) picture is to be displayed to fill the screen (FULL CINEMA).



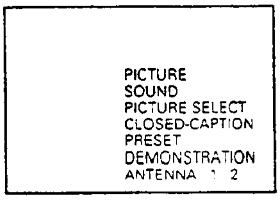
⑪ STILL button

Press to select still screen or normal mode.
If the button is pressed during Picture-in-Picture operation, the subpicture disappears.

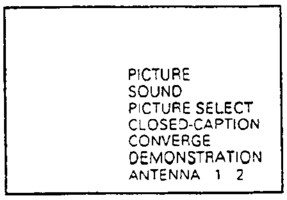
⑫ MENU button

Press to turn on the menu screen for use in function selection. Press again to return to normal operation.
The selected items are displayed in purple, and the items can be selected with the ▲ and ▼ buttons ⑬.

NORMAL CINEMA mode



FULL CINEMA mode



⑬ Select/Adjust/Set buttons (SET, ▲, ▼, ◄, ►)

▲, ▼, ◄, ►: Press to select, adjust or set items on the menu screen.
SET: Press to activate the selected function.

⑭ RESET button

Press to reset the microcomputer in the remote control unit to its initial mode in the following cases:

- When the batteries are replaced.
- If the remote control unit will not function properly when an operation button is pressed, etc.

NOTE:

On rare occasions, an electrical discharge may occur inside the unit, causing some command malfunction. If this happens, pressing RESET should correct the problem. The possibility exists, however, that instead of correcting the problem, pressing RESET may erase the programmed memory.

⑮ M. CLR button

Erases all commands programmed through the LEARN function; press lightly with the tip of a ballpoint pen or other fine-tipped instrument during learn mode to activate this function.

16. SPECIFICATIONS

• SD-P5075-K, SD-P5073-K, SD-P4575-K, SD-P4573-K AND SD-P5575-K

DISPLAY SECTION

Reception system ....American TV standard NTSC system
Screen size ....55" (SD-P5575)
50" (SD-P5075/SD-P5073)
45" (SD-P4575/SD-P4573)
CRT ....7" High focus CRT x 3
Brightness (White peak) 450 (SD-P5575)
550 (SD-P5075/SD-P5073)
640 (SD-P4575/SD-P4573) Foot-Lambert
[100 % Window signal input contrast, bright Max.]
Actual viewing angle ....Horizontal H = 140°
Vertical V = 45°
Horizontal resolution ....830 lines (SD-P5575/SD-P5075/
SD-P5073)
770 lines (SD-P4575/SD-P4573)
[Input digital test pattern (900 lines resolution)]
Input terminals ....4 video input systems,
S-VIDEO input jacks (Y/C separate INPUT) x 4
4 audio input systems
Output terminals ....REC OUTPUT (To VIDEO-1);
Video output, audio output (For recording) x 1
TV OUTPUT (Ex. to Audio/Video amplifier) x 1
System remote control terminals ....IN/OUT
Input signal ....Video signal: 1.0 Vp-p ± 0.2 V
(75 ohms load)
Audio signal: 500 mV rms
Input impedance ....Video input: 75 ohms ± 10 %
Audio input: 22 kilo-ohms or more
Input signal polarity ....Synchronized negative
Output terminal signal ratings:
Output terminals
(except VIDEO-1) ......Video signal: 1 Vp-p (75 ohms load)
Audio signal: 500 mV rms (100 % modulation)
Output impedance ....Video output: 75 ohms ± 10 %
Audio output: Less than 1 kilo-ohms
Audio output terminal ....Audio signal: 500 mV rms
(VARIABLE) (100 % modulation Volume MAX.)

TUNER SECTION

Circuit type ....Video signal detection:
PLL full synchronous detection
PLL digital synthesizer system
Audio multiplex: BTSC system
Reception channels ....VHF; CH2~CH13, UHF; CH14~CH69
CATV (STANDARD, AIR or HRC switchable)
CATV A-6 CH~CCC (W+29) CH
Antenna terminals ....ANTENNA terminal, 75 ohms UNBAL,
F-type connector (VHF, UHF MIXED)

AMPLIFIER SECTION

Effective output
Front (both channels driven) ....10 W + 10 W
Center (except SD-P5073/SD-P4573) ....10 W
Rear (except SD-P5073/SD-P4573) ....5 W + 5 W
(THD. 1 % 50 Hz to 15,000 Hz, 8 ohms)
Tone control:
BASS ....+8 dB, −10 dB (100 Hz)
TREBLE ....+8 dB, −10 dB (10 kHz)
Built-in speaker system ....16 cm (6-1/2 in) full range x 2
10 cm (3-15/16 in) full range x 1 (except SD-P5073/
SD-P4573)
External speaker impedance
SD-P5575/SD-P5075/SD-P4575
(FRONT, CENTER, REAR) ....8 ~ 16 ohms
SD-P5073/SD-P4573
(FRONT) ....8 ~ 16 ohms

ELECTRICAL SECTION, MISCELLANEOUS

Power requirements ....120 V AC, 60 Hz
Power consumption
SD-P5575/SD-P5075/SD-P4575 .....350 W, 660 VA (CSA)
SD-P5073/SD-P4573 ....310 W, 600 VA (CSA)
External dimensions
SD-P5575 ....1373 (W) x 700 (D) x 1373 (H) mm
54-1/16 (W) x 27-9/16 (D) x 54-1/16 (H) inch
SD-P5075 ....1267 (W) x 655 (D) x 1302 (H) mm
49-7/8 (W) x 25-13/16 (D) x 51-1/4 (H) inch
SD-P4575 ....1161 (W) x 625 (D) x 1232 (H) mm
45-11/16 (W) x 24-5/8 (D) x 48-1/2 (H) inch
SD-P5073 ....1267 (W) x 655 (D) x 1302 (H) mm
49-7/8 (W) x 25-13/16 (D) x 51-1/4 (H) inch
SD-P4573 ....1161 (W) x 625 (D) x 1232 (H) mm
45-11/16 (W) x 24-5/8 (D) x 48-1/2 (H) inch
Weight of main unit
SD-P5575 ....114 kg (251 lb 6 oz)
SD-P5075 ....103 kg (227 lb 2 oz)
SD-P4575 ....93 kg (205 lb 1 oz)
SD-P5073 ....103 kg (227 lb 2 oz)
SD-P4573 ....93 kg (205 lb 1 oz)

WIRELESS REMOTE CONTROL UNIT

Operation system: ...Programmable infrared remote control
system
Power source: ....Two DURACELL® "AA" MN1500 1.5 V
alkaline dry cell batteries
Dimensions: ....66 (W) x 37.5 (H) x 199 (D) mm
2-5/8 (W) x 1-1/2 (H) x 7-13/16 (D) inch
Weight: ....140 g (5 oz) (without batteries)

ACCESSORIES

Operating instructions 1
Warranty card 1
Remote control unit 1
DURACELL® "AA" MN1500 1.5 V alkaline dry
cell batteries 2
Important Safeguards card 1

NOTE:
Specifications and design subject to possible modifications without notice due to improvements.

• PRO-97 (Including PRO-107 and PRO-77)

DISPLAY SECTION

Reception system	American TV standard NTSC system
Screen size (without acrylic panel)	55" (PRO-107) 50" (PRO-97) 45" (PRO-77)
CRT	7" High focus CRT x 3
Brightness (White peak)	450 (PRO-107) 550 (PRO-97) 640 (PRO-77) Foot-Lambert [100 % Window signal input contrast, bright Max.]
Actual viewing angle	Horizontal H = 140° Vertical V = 45°
Horizontal resolution	830 lines (PRO-107/PRO-97) 770 lines (PRO-77) [Input digital test pattern (900 lines resolution)]
Input terminals	4 video input systems, S-VIDEO input jacks (Y/C separate INPUT) x 4 4 audio input systems
Output terminals	REC OUTPUT (To VIDEO-1); Video output, audio output (For recording) x 1 TV OUTPUT (Ex. to Audio/Video amplifier) x 1
System remote control terminals	IN/OUT
Input signal	Video signal: 1.0 Vp-p ± 0.2 V (75 ohms load) Audio signal: 500 mV rms
Input impedance	Video input: 75 ohms ± 10 % Audio input: 22 kilo-ohms or more
Input signal polarity	Synchronized negative
Output terminal signal ratings:	
Output terminals (except VIDEO-1)	Video signal: 1 Vp-p (75 ohms load) Audio signal: 500 mV rms (100 % modulation)
Output impedance	Video output: 75 ohms ± 10 % Audio output: Less than 1 kilo-ohms
Audio output terminal (VARIABLE)	Audio signal: 500 mV rms (100 % modulation Volume MAX.)

TUNER SECTION

Circuit type	Video signal detection: PLL full synchronous detection PLL digital synthesizer system Audio multiplex: BTSC system
Reception channels	VHF; CH2~CH13, UHF; CH14~CH69 CATV (STANDARD, AIR or HRC switchable) CATV A-6 CH~CCC (W+29) CH
Antenna terminals	ANTENNA terminal, 75 ohms UNBAL, F-type connector (VHF, UHF MIXED)

AMPLIFIER SECTION

Effective output	
both channels driven	10 W + 10 W (THD. 1 % 50 Hz to 15,000 Hz, 8 ohms)
Tone control:	
BASS	+8 dB, −10 dB (100 Hz)
TREBLE	+8 dB, −10 dB (10 kHz)
Built-in speaker system	2 way x 2
External speaker impedance	8 ~ 16 ohms

ELECTRICAL SECTION, MISCELLANEOUS

Power requirements	120 V AC, 60 Hz
Power consumption	310 W, 600 VA (CSA)
External dimensions	
PRO-107	1276 (W) x 700 (D) x 1373 (H) mm 50-1/4 (W) x 27-9/16 (D) x 54-1/16 (H) inch
PRO-97	1170 (W) x 675 (D) x 1302 (H) mm 46-1/16 (W) x 26-9/16 (D) x 51-1/4 (H) inch
PRO-77	1064 (W) x 625 (D) x 1232 (H) mm 41-7/8 (W) x 24-5/8 (D) x 48-1/2 (H) inch
Weight of main unit	
PRO-107	125 kg (275 lb 10 oz)
PRO-97	117 kg (258 lb)
PRO-77	104 kg (229 lb 5 oz)

WIRELESS REMOTE CONTROL UNIT

Operation system:	Programmable infrared remote control system
Power source:	Two DURACELL® "AA" MN1500 1.5 V alkaline dry cell batteries
Dimensions:	66 (W) x 37.5 (H) x 199 (D) mm 2-5/8 (W) x 1-1/2 (H) x 7-13/16 (D) inch
Weight:	140 g (5 oz) (without batteries)

ACCESSORIES

Operating instructions	1
Warranty card	1
Remote control unit	1
DURACELL® "AA" MN1500 1.5 V alkaline dry cell batteries	2
Important Safeguards card	1
Protective screen	1
Upper frame	2
Lower frame	2
Screws 25 MM	12 (PRO-107) 8 (PRO-97/PRO-77)
Screws 18 MM	12 (PRO-107) 8 (PRO-97/PRO-77)

NOTE:
Specifications and design subject to possible modifications without notice due to improvements.